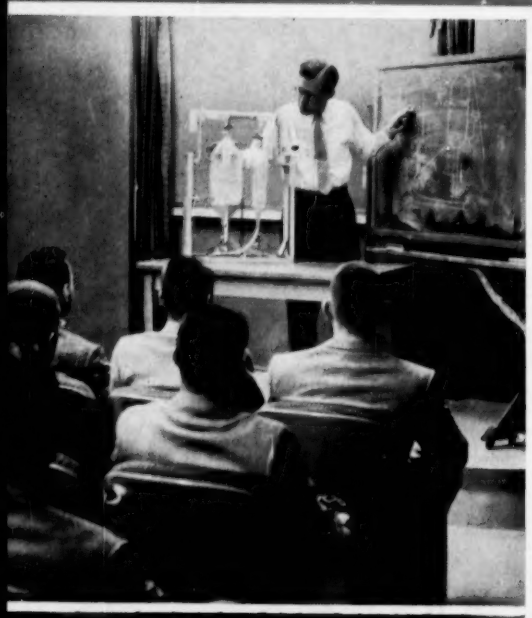
Chemical Week

July 9, 1955

Price 35 cents



'Summer school' is Kellogg's answer to industry-wide query: How recruit engineers? . . . p. 28

Low-pressure polyethylene processes vary, but products are more alike than different . . . . . p. 48

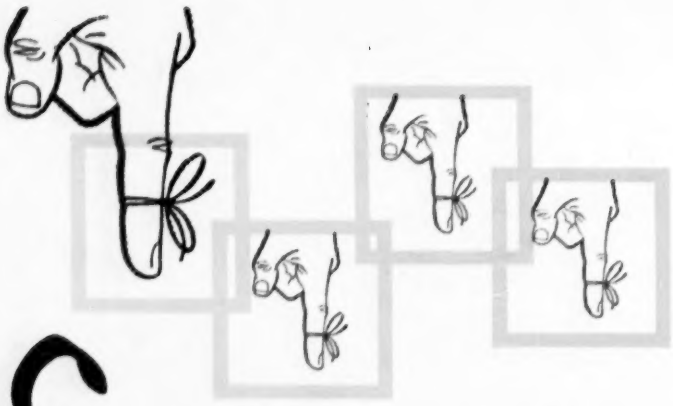
How is '55 shaping up? What are major problems? Here's sales managers' consensus . . . . p. 60

You can sell specialties by radio on a cost-per-order basis—but it's a tricky business . . . . . p. 76

Carbide sets up plan in Texas to thwart hurricane damage; bonus: shipshape plant . . . . . p. 84

A McGRAW-HILL PUB

E P POWER
UNIVERSITY MICROFILMS IN
313 N 1ST ST
ANN ARBOR MICH

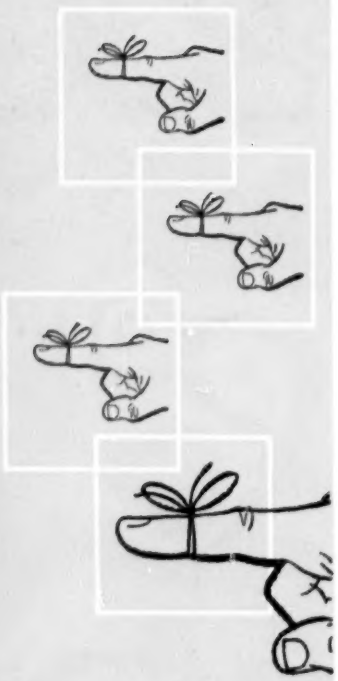


Something worth remembering!

Your dependable source

of IPA is

SHELL CHEMICAL



When you order isopropyl alcohol from Shell Chemical, you gain in three important ways. You get guaranteed high-purity IPA, available in three grades, to meet your specifications. You get prompt delivery from strategically located bulk depots. And you can save money by taking advantage of bulk prices available through multi-product deliveries in compartment tank cars and trucks.

Write for technical literature and sales specifications.

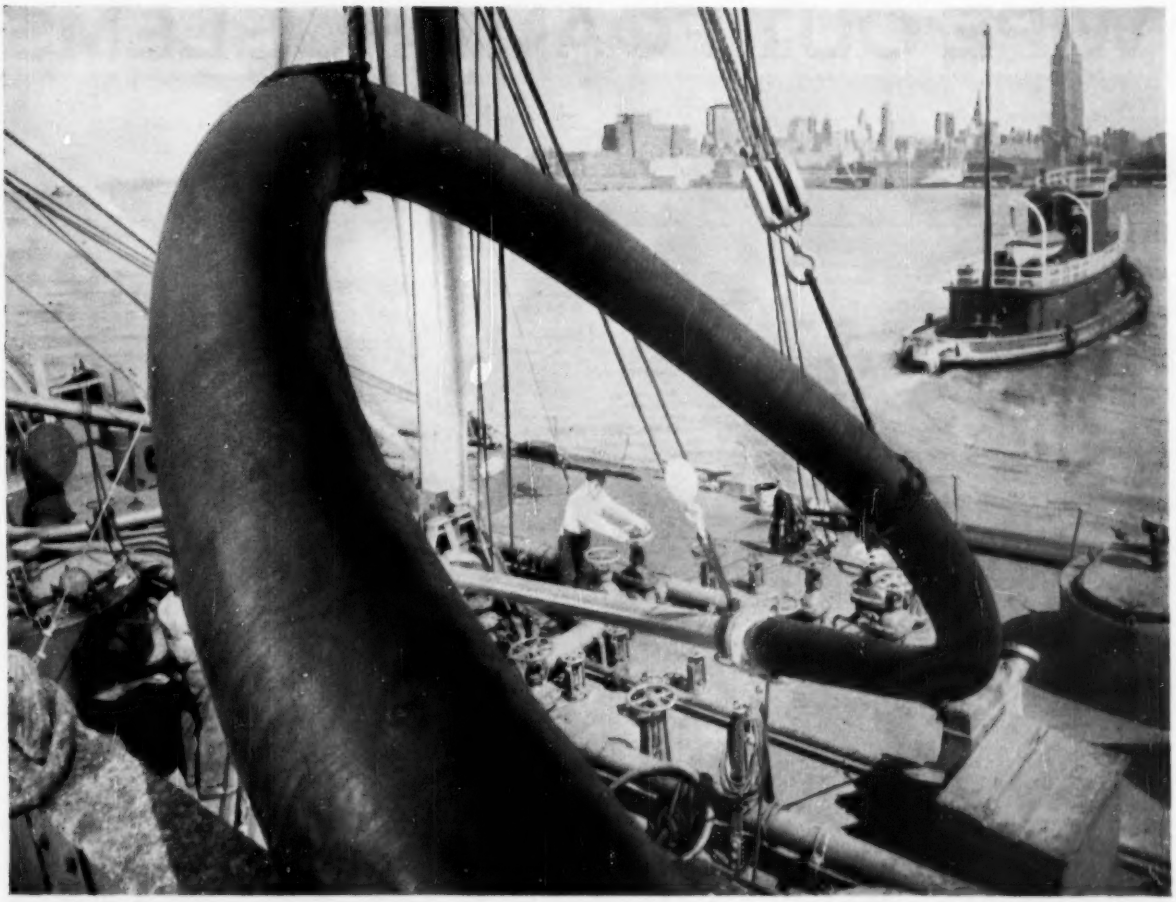
SHELL CHEMICAL CORPORATION

CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE

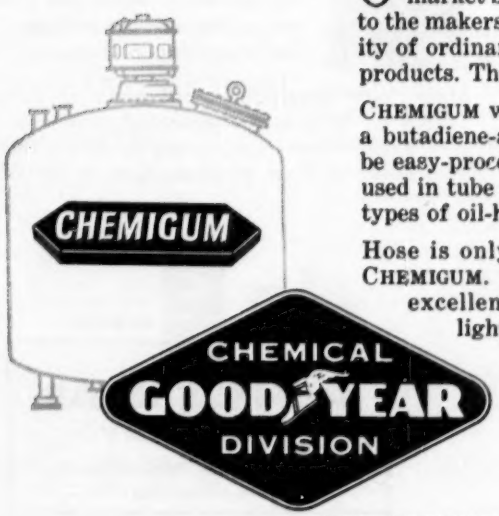
380 Madison Avenue New York 17, New York

Atlanta • Boston • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • New York • San Francisco • St. Louis

IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited • Montreal • Toronto • Vancouver



How to mix oil and water—at a profit!



OIL often moves from rigs to refineries and, thence, to market by water. Much hose is needed. Swelling problem to the makers and users of oil-marketing hose was the inability of ordinary rubber to withstand the attack of petroleum products. That is, until CHEMIGUM came into being.

CHEMIGUM was the first of the truly oil-resistant rubbers—a butadiene-acrylonitrile copolymer specifically designed to be easy-processing. Since 1940, CHEMIGUM has been widely used in tube and cover compounds to lengthen the life of all types of oil-handling hose—and do it at lower cost!

Hose is only one use for smaller-baled, lighter-colored CHEMIGUM. You'll find its heat-softening characteristics, excellent physical properties and outstanding heat-, light- and age-resistance give you a better product every step of the way—whether it's molded, extruded, calendered or used in solution.

Details? Write to:

Goodyear, Chemical Division,
Dept. G-9417, Akron 16, Ohio

Chemigum, Pliobond, Pliolex, Pliolite, Plio-Tuf, Pliovic—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

The Finest Chemicals for Industry — CHEMIGUM • PLIOBOND • PLIOFLEX • PLIOLITE • PLIO-TUF • PLIOVIC • WING-CHEMICALS

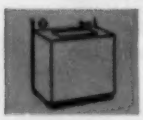
WIPE OUT FOAM PROBLEMS

with TRITON CF-10

This new non-ionic detergent answers the problem of excessive foaming in cleaning compounds. At the same time, TRITON CF-10 offers outstanding detergent properties. By blending it with alkaline builders and other detergents, you can now obtain both high detergency and controlled foam.

TRITON CF-10 can be used with excellent results in the following applications where controlled foam is important:

Automatic Dishwashing Compounds. In machine dishwashing excessive foam causes overflow, reduces the efficiency of washing and rinsing operations, results in streaking and spotting.



Automatic Laundry Detergents. Where the *right* amount of foam is necessary to promote effective de-soiling of the clothes and satisfactory removal of the soil.

Dairy Cleaning Compounds. For "in place" cleaning of pipe-line systems. TRITON CF-10 promises to simplify rinsing and will help eliminate germ-breeding residues.

Metal Cleaning. For washing and rinsing operations where too much foam may be the cause of a poor plating, pickling or priming job later on.

Many more applications will occur to formulators. TRITON CF-10 is now commercially available. Investigate its possibilities by requesting samples or information from Rohm & Haas representatives, or by writing us.

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

TRITON *is a trade-mark, Reg. U.S. Pat. Off. and in principal foreign countries.*

Chemical Week

Volume 77 — July 9, 1955 — Number 2

PUBLISHER.....Wallace F. Traendly

EDITORIAL DIRECTOR.....Sidney D. Kirkpatrick

EDITOR.....W. Alec Jordan

MANAGING EDITOR.....Howard C. E. Johnson

DEPARTMENT EDITORS

Business & Industry: Jane H. Cutaia
Markets: Anthony J. Piombino
Production: Donald P. Burke
Research: Ralph R. Schulz
Specialties: J. R. Warren

Special Projects: Homer Starr

Reports: Michael L. Yaffee

Illustration, Format: Donald R. Thayer

Copy: William Mullinack

Buyers' Guide: Robert N. Shaw

ASSISTANT EDITORS

Business & Industry: Vincent L. Marsilia
Distribution: John M. Winton
Markets: Jorma Hyypia
Production: Kenneth Wilsey
Research: Joseph F. Kalina
Specialties: Charles Joslin

REGIONAL EDITORS

Midwest: Frank C. Byrnes, Chicago
Southwest: James A. Lee, Houston
West Coast: Elliot Schrier, San Francisco

EDITORIAL ASSISTANTS

Virginia Clark
Kay Sebiry

NATIONAL NEWS

Economics: Dexter M. Keezer, *Director*
Douglas Greenwald, Robert P. Ulin

Atlanta: William Kearns
Cleveland: Robert E. Cochran
Detroit: James C. Jones
Los Angeles: John Shinn
San Francisco: Margaret Ralston
Washington: George B. Bryant, Jr.
Correspondents in 73 principal cities

WORLD NEWS

John Wilhelm, *Editor*
London: Edward W. S. Hull
Paris: John O. Coppock
Bonn: Gerald W. Schroder
Rio de Janeiro: Peter Weaver
Mexico City: John H. Kearney
Tokyo: Dan Kurzman
Bombay: Gordon Graham
Correspondents in 44 capitals and principal cities

ADVERTISING STAFF

Sales Director: Robert S. Muller
Sales Manager: Steven J. Shaw
Business Manager: Anton J. Mangold
Sales Promotion Mgr.: E. A. Atwood, Jr.
Market Service Mgr.: Adolph I. Losick
Sales Reps.: See Advertisers Index

10 BEHIND THE NEWS

12 OPINION

17 NEWSLETTER

21 BUSINESS & INDUSTRY
Merger hearings provoke voluntary response from chemical process industries' speakers

22 Two governmental commissions urge state and local aid in natural resources study

23 Similarity in trademarks — what's grounds for lawsuit?

28 Kellogg student-training program; one answer to manpower problem

32 Chemical management and industrial health—as seen by a union's M.D.

39 Singled out in sudden crackdown, chemical firms fight city's eviction drive

48 RESEARCH
Low-pressure polyethylene processes differ, but they produce essentially the same product

50 Speculation rife on commercial future of synthetic "natural" rubber

60 DISTRIBUTION
Plenty of sales, plenty of problems—that's the finding of just-finished survey of sales managers

69 MARKETS
Market Letter

72 There's a raft of reasons why ammonium sulfate supply won't be burdensome for the nonce

76 SPECIALTIES
High-powered radio sells mail-order specialties on a piecework basis

80 Rohm & Haas goes into dishwashers with a low-sudser

82 New product research pays off for small soapmaker

84 PRODUCTION
How Carbide is set up to protect plant against hurricanes

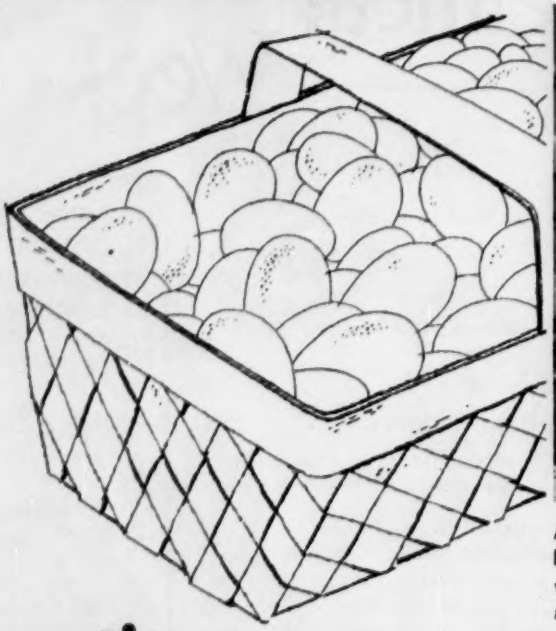
88 Chemical process industries, power requirements are on rise

Chemical Week (including Chemical Specialties and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc. James H. McGraw (1860-1948), founder. Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Publication Office: 1309 Noble St., Philadelphia 23, Pa. Donald C. McGraw, President; Paul Montgomery, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Nelson Bond, Executive Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Joseph H. Allen, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Circulation Director.

Subscriptions to Chemical Week are solicited from management men in the chemical process industries. Position and company connection must be indicated on subscription order. Address all subscription communications to Chemical Week Subscription Service, 330 W. 42nd St., New York 36, N. Y., or 1309 Noble St., Philadelphia 23, Pa. Allow one month for change of address.

Single copies 35¢ except Annual Buyer's Guide issue, priced at $2.50. Subscription rates—United States and Possessions $5.00 a year; $8.00 for two years; $10.00 for three years. Canada $6.00 a year; $9.00 for two years; $12.00 for three years. Other Western Hemisphere Countries $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries $25.00 a year; $40.00 for two years; $50.00 for three years. Entered as second class matter December 20, 1951, at the Post Office at Philadelphia 23, Pa., under the act of March 3, 1879. Printed in U.S.A. Copyright 1955 by McGraw-Hill Publishing Co. Inc.—All rights reserved.

Capsule Case History:



A New Diatomaceous Earth Processing Plant

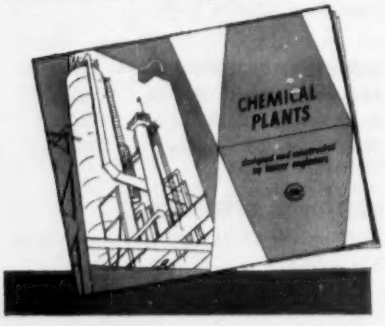
was delivered by Kaiser Engineers as a single package project to one of America's largest producers of diatomite products. This project, from preliminary layouts, through design, engineering, procurement and construction was delivered to the client as an operating unit.

The KE team of engineering specialists is staffed and equipped to build your new chemical plant or to expand existing facilities.

Write today. A new KE chemical processing brochure (No. 101) will be mailed upon your request.

Sometimes it pays...

Kaiser Engineers, a close-knit team of specialists, is staffed to handle every phase of your project. Their work in widely divergent fields of design and construction offers plenty of proof that it pays to put all your project eggs in this one basket.

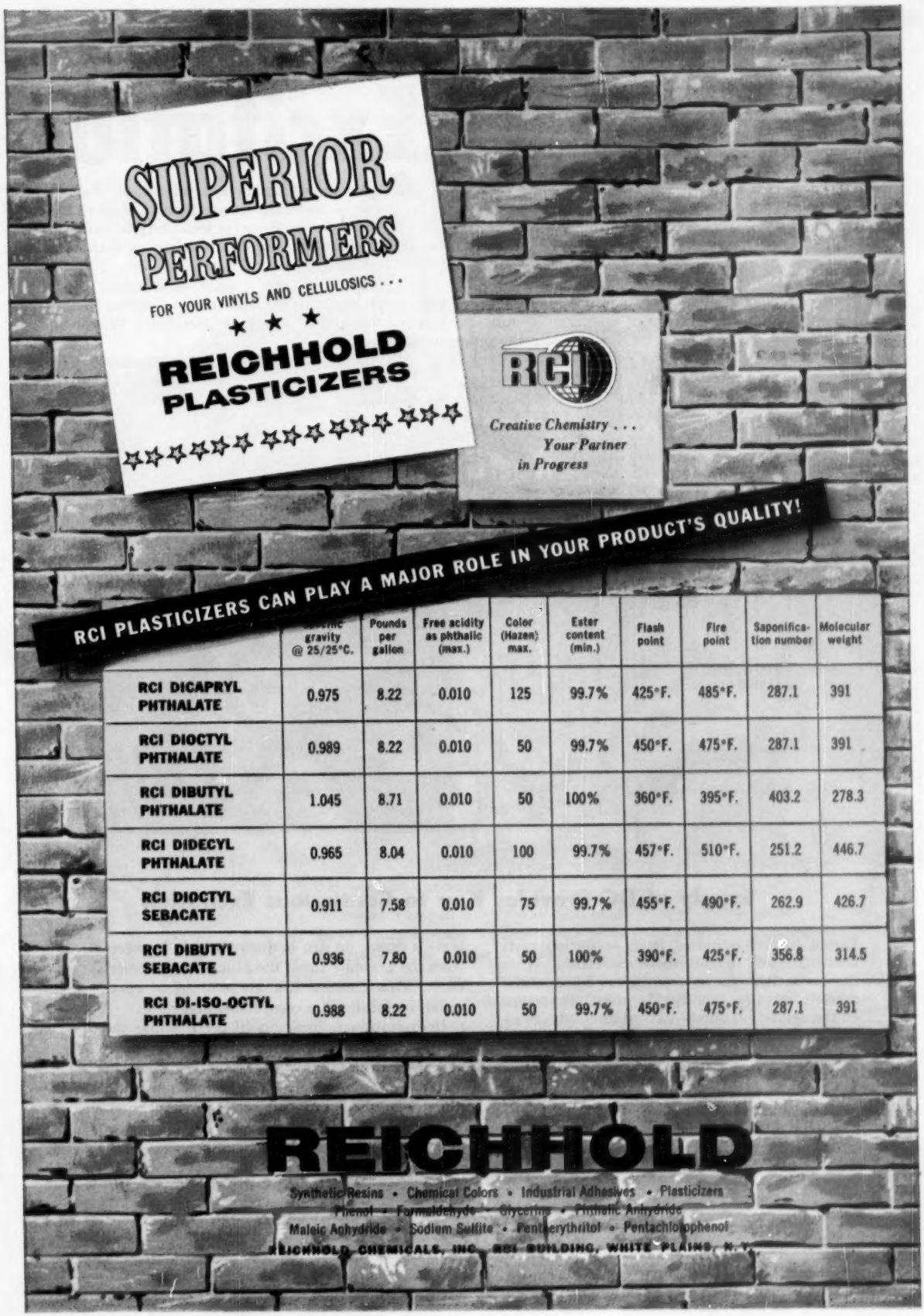


kaiser | engineers ...*for low operating costs*

DIVISION OF | HENRY J. KAISER COMPANY

ENGINEERS K CONTRACTORS

• HOME OFFICE: KAISER BUILDING, OAKLAND 12, CALIFORNIA (CABLE: KAISENGS) NEW YORK, PITTSBURGH, WASHINGTON, D.C.
• HENRY J. KAISER CONSTRUCTION CO. • HENRY J. KAISER COMPANY (Canada) LTD., MONTREAL • KAISER ENGINEERS INTERNATIONAL, INC.


SUPERIOR
PERFORMERS
FOR YOUR VINYLS AND CELLULOSICS . . .
REICHHOLD
PLASTICIZERS
RCI
Creative Chemistry . . .
Your Partner
in Progress
RCI PLASTICIZERS CAN PLAY A MAJOR ROLE IN YOUR PRODUCT'S QUALITY!
REICHHOLD
Synthetic Resins • Chemical Colors • Industrial Adhesives • Plasticizers
Phenol • Formaldehyde • Glycerine • Phthalic Anhydride
Maleic Aghydride • Sodium Sulfite • Pentherythritol • Pentachlorophenol
REICHHOLD CHEMICALS, INC., RCI BUILDING, WHITE PLAINS, N.Y.

	Specific gravity @ 25/25°C.	Pounds per gallon	Free acidity as phthalic (max.)	Color (Hazen) max.	Ester content (min.)	Flash point	Fire point	Saponification number	Molecular weight
RCI DICAPRYL PHTHALATE	0.975	8.22	0.010	125	99.7%	425°F.	485°F.	287.1	391
RCI DIOCTYL PHTHALATE	0.989	8.22	0.010	50	99.7%	450°F.	475°F.	287.1	391
RCI DIBUTYL PHTHALATE	1.045	8.71	0.010	50	100%	360°F.	395°F.	403.2	278.3
RCI DIDECYL PHTHALATE	0.965	8.04	0.010	100	99.7%	457°F.	510°F.	251.2	446.7
RCI DIOCTYL SEBACATE	0.911	7.58	0.010	75	99.7%	455°F.	490°F.	262.9	426.7
RCI DIBUTYL SEBACATE	0.936	7.80	0.010	50	100%	390°F.	425°F.	356.8	314.5
RCI DI-ISO-OCTYL PHTHALATE	0.988	8.22	0.010	50	99.7%	450°F.	475°F.	287.1	391

For Reliable Rectifier Operation Get

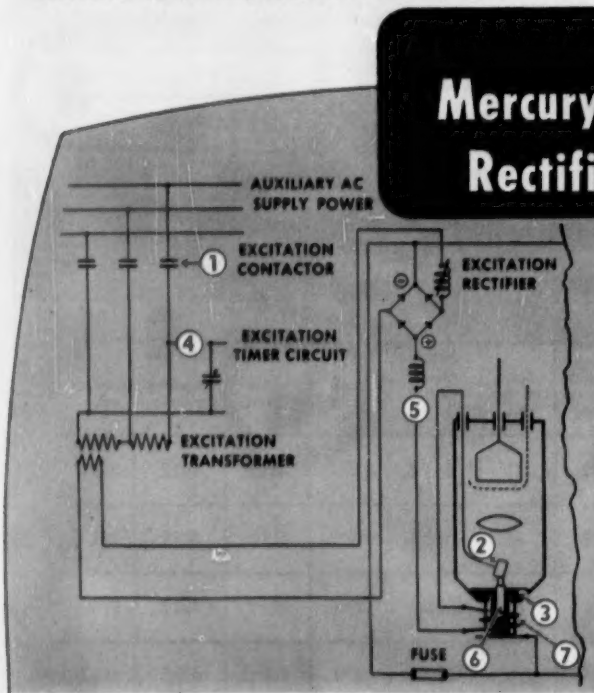
Continuous Excitation

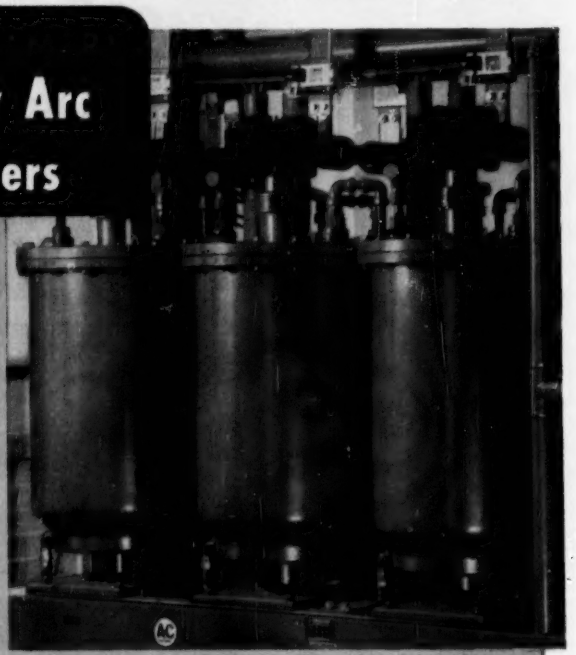
Allis-Chalmers excitron rectifiers eliminate the need for a pulse-type firing system timed for operation every cycle. Maintenance is easy because of the simplicity of design.

A small dc excitation arc is automatically ignited only once, when the unit is started, and then maintained on the mercury cathode of each rectifier tube. It offers advantages similar to a pilot light. Since it is far easier to maintain an arc than to start it, this feature makes the excitron far less likely to lose excitation during power supply disturbances than other types of rectifiers.

Get all the facts about excitron rectifiers before your next installation. Call the A-C office nearest you or write Allis-Chalmers, Milwaukee 1, Wisconsin.

Mercury Arc Rectifiers





Supply of DC Provides Key to Continuous Excitation

Direct current supplied from excitation rectifiers is the key to continuous excitation. When the excitation system is energized by means of a contactor (1), positive dc potential appears on the excitation anode (2) of each tube, negative at the cathode (3). A timer (4), through contacts of the excitation failure relay (5), is energized at the same time.

As soon as voltage is applied, current flows from the anode to the cathode through the ignition plunger (6). This current energizes the ignition coil (7) and causes the plunger to be pulled below the mercury surface. As the plunger travels down, an arc is drawn which transfers from the graphite tip of the plunger to the mercury. This current flow keeps the coil energized, maintaining a continuous arc.

If excitation failure should occur while the rectifier is carrying load, the plunger is released, floating upward in the mercury until it makes contact with the anode, then repeating the process above until the arc is re-established.

Re-establishment of the arc as outlined takes less than a second — it does not interfere with normal operation.

ALLIS-CHALMERS

A-4592

This offer never expires...

White mineral oils and petrolatums—their development, their manufacture, their use—are our business.

No matter what you make—baby oil, a pharmaceutical ointment, an agricultural spray—if you use white oil or petrolatum in your product or processing . . . we may be of help to you in two ways:

First, we can serve you by supplying you with the type of white mineral oil or petrolatum exactly suited to your specific needs. We'll tailor-make it if necessary.

Second, we shall give you the benefit—in product quality and technical assistance—of more than half a century's concentration on producing better white oils and petrolatums and helping industry use them more profitably.

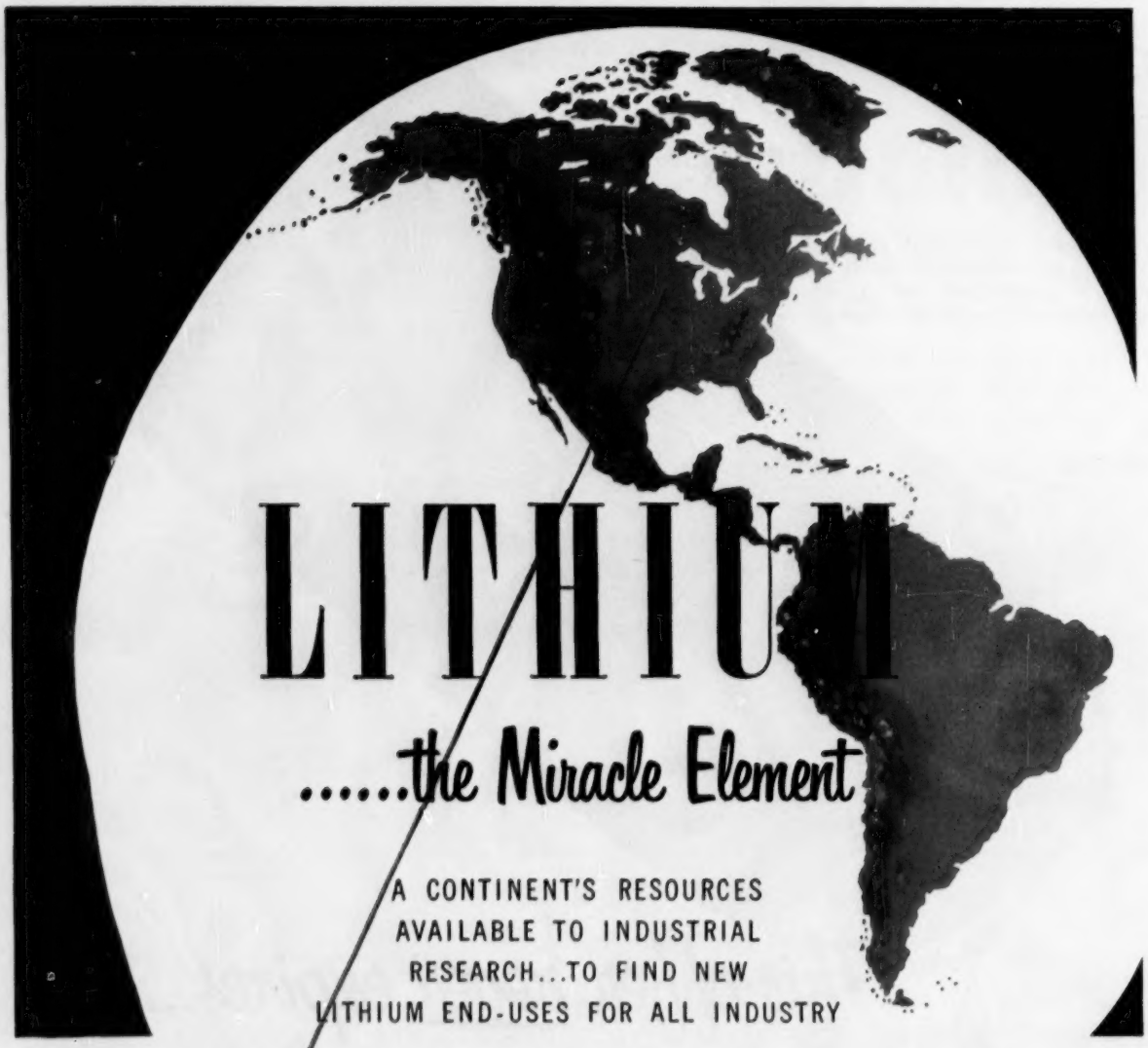
Because white oils and petrolatums are specifically our business, we believe we have more to offer you—productwise and servicewise—to help you turn out a better product.

We would like you to feel that our door is always open anytime you have any questions concerning white oils or petrolatums. You are always welcome. That is why we say "this offer never expires". Just call or drop a line.

Achieved by **Sonneborn** RESEARCH

L. SONNEBORN SONS, INC., New York 10, N. Y.

SPECIALISTS IN WHITE OILS AND PETROLATUMS FOR OVER HALF A CENTURY.



LITHIUM

.....the Miracle Element

A CONTINENT'S RESOURCES
AVAILABLE TO INDUSTRIAL
RESEARCH...TO FIND NEW
LITHIUM END-USES FOR ALL INDUSTRY

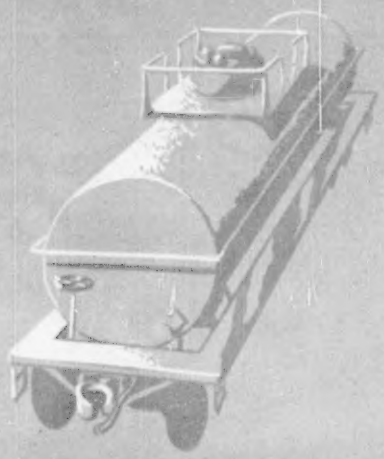
Take a look at Lithium, if you have a production interest in ceramics, multi-purpose greases, air conditioning, brazing fluxes, pharmaceuticals, organic chemicals or metallurgy. If your industry is *not* one of those mentioned above—why don't *you* take a long look at Lithium too? Lithium's unusual, sometimes paradoxical, often uniquely valuable properties have achieved over-all savings—through shortcuts, reduction of waste, improvement of end product and simplification of operating procedures—in industry after industry. Investigate how Lithium may fit into *your* production picture. Its possibilities are unlimited. Write for Data Sheets.

. . . trends ahead in industrial applications for Lithium

LITHIUM CORPORATION OF AMERICA, INC.
2510 RAND TOWER
MINNEAPOLIS 2, MINN.

MINES: Keystone, Custer, Hill City, South Dakota • Bessemer City, North Carolina • Cat Lake, Manitoba • Amos Area, Quebec • BRANCH SALES OFFICES: New York • Chicago
CHEMICAL PLANTS: St. Louis Park, Minnesota • Bessemer City, North Carolina • RESEARCH LABORATORY: St. Louis Park, Minnesota

stauffer caustic soda



Liquid electrolytic caustic soda from Niagara Falls, N. Y., Henderson, Nev., Dominguez and Oakland, Cal.

Fused grades from Dominguez, Cal.

Rayon grade from Niagara Falls, N. Y.

stauffer caustic soda

Modern lined and insulated tank cars and tank trucks deliver liquid caustic soda of the same high degree of purity it has on leaving Stauffer Plants.

stauffer caustic soda

Prompt handling of emergency requirements coupled with continuous dependability have made Stauffer a valued name as a source for chemicals.

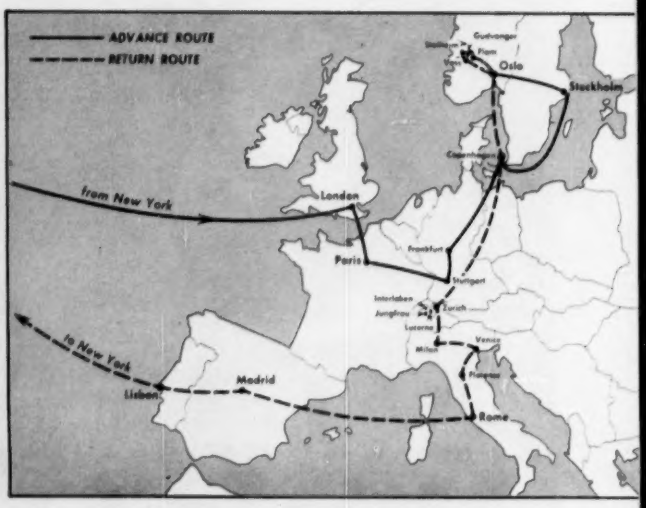
STAUFFER CHEMICAL COMPANY

380 MADISON AVENUE, NEW YORK 17, N. Y.

221 N. LaSalle St., Chicago 1, Ill. • 636 California St., San Francisco 8, California

326 S. Main Street, Akron 8, Ohio • 824 Wilshire Boulevard, Los Angeles 14, Calif. • 8901 Hempstead Road, Houston 8, Texas • North Portland, Ore. • Weslaco, Texas • Apopka, Fla.

Behind the News



EMPTY CHAIR, OCCUPANT'S ITINERARY: To get the news, go where it is.

THERE ARE two kinds of news. The kind that just drifts in and the kind that you have to go out to get. It's the 'go-get' type of news that is the more valuable; that's the type we must deliver to our readers . . ."

Those few lines are taken from the editorial philosophy I drafted five years ago for the magazine we then proposed to publish—and which became CHEMICAL WEEK. It's still one of our cardinal principles: go get the news—see what's happening firsthand.

The "getting", of course, takes a lot of "going." Last year, for instance, CW's editors planed or trained well over a hundred thousand miles. They ranged from British Columbia to Florida, from Arizona to Quebec. Last week, however, Editorial Director Sid Kirkpatrick returned from the longest junket (47 days, 11,721 miles) that any CW editor has taken this year. His itinerary *(see cut)*: New York - London - Paris - Stuttgart - Frankfurt - Copenhagen - Stockholm - Oslo - Zurich - Rome - Madrid - New York.

"Kirk", ebullient and observant, kept himself right busy while he was abroad, "crawled, climbed or was driven through many millions of pounds sterling of modern chemical plants." And his airmailed dispatches (12,000 words in all) helped to keep us up to date on things European.

Some of his capsulated impressions:

England: "There's no question about it; ever since England abandoned rationing there's a new zip in the British. They're on their toes, confident and working hard. Too, there's plenty of evidence that the information gathered by the Anglo-American Productivity Team is being put to good use. Now, by the way, U.S. engineering firms are really doing business in Britain."

France: "The country's progressing but not driving ahead with the zeal of England or the diligence of Germany."

Germany: "Overwhelming is the adjective I would use to describe what's happening in Germany. Progress borders on the spectacular. I wouldn't say that the Germans are exactly eager to accept the idea of American chemical engineering—they still prefer their chemist-process engineer team system—but there's no disparaging the tremendous accomplishments of the past few years. And they're really pushing research—their new laboratories are virtual palaces.

"An eye opener for U.S.A. visitors—and there were many of them—was the great ACHEMA exposition and congress in Frankfurt. The Germans are really past masters in staging these World Fairs in miniature. They provide well-developed channels of information and a means of education, which, in a comparative sense, we've largely neglected over here—to our own loss, no doubt."

Switzerland: "The pressure is on equipment; and they're foresighted and aggressive in design."

Italy: "Natural gas from the Po Valley is recasting the chemical industry; tied in as the chemical industry now is with petroleum, chemicals represent a major segment of the nation's economy.

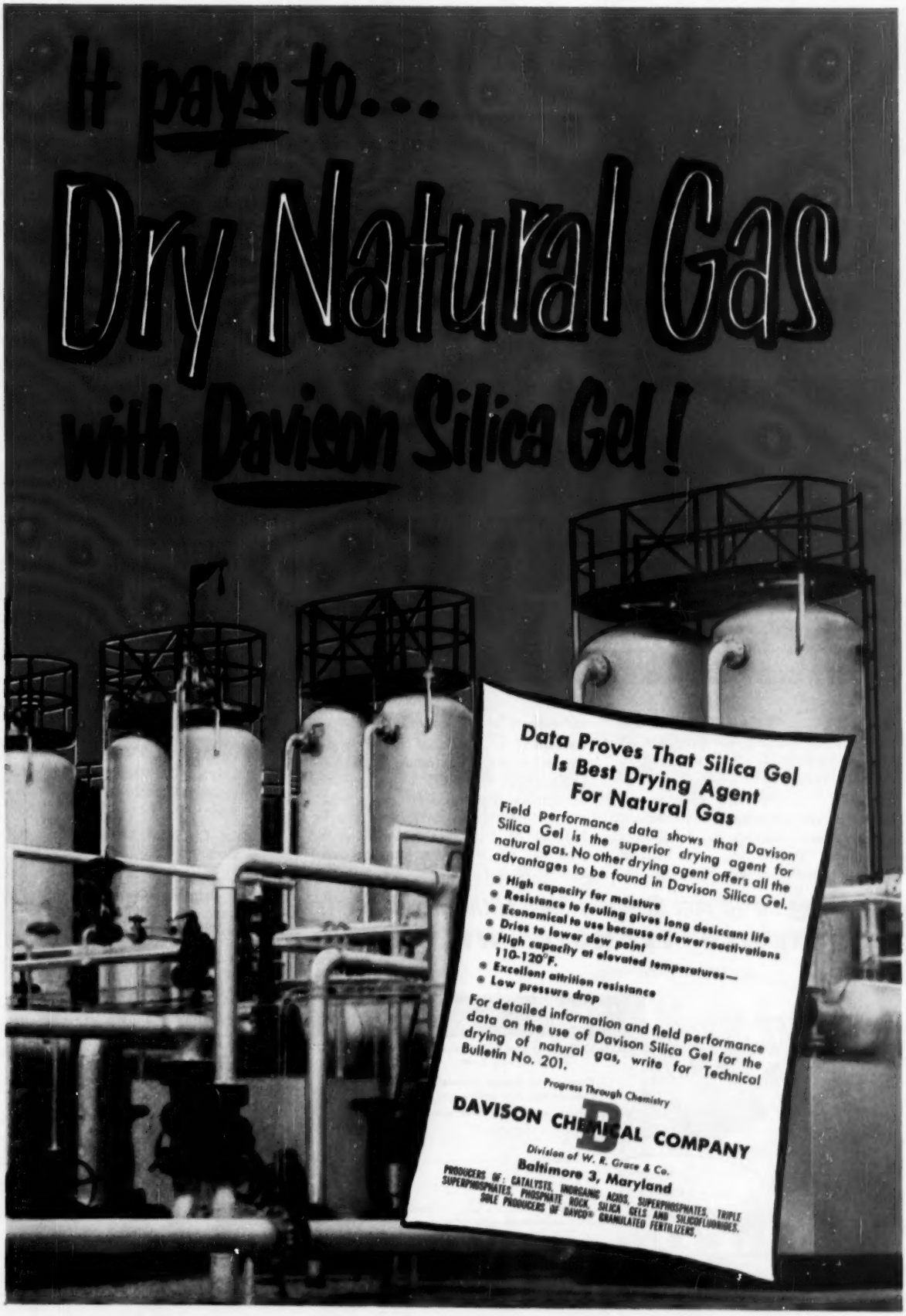
"I'm impressed, too, with just how well built the Italian plants are—superbly built, I would say. Rugged, clean, orderly and well-engineered; and, because marble is available, many of the office buildings have an inspiring beauty."

"It seems to me, too, that not many people realize just how extensively Italian plants and processes are now being sold throughout the world. There's a great deal of know-how being exported from Italy; and much of it is going to the U.S.A. That's quite a change from the pattern that obtained a few decades ago . . ."

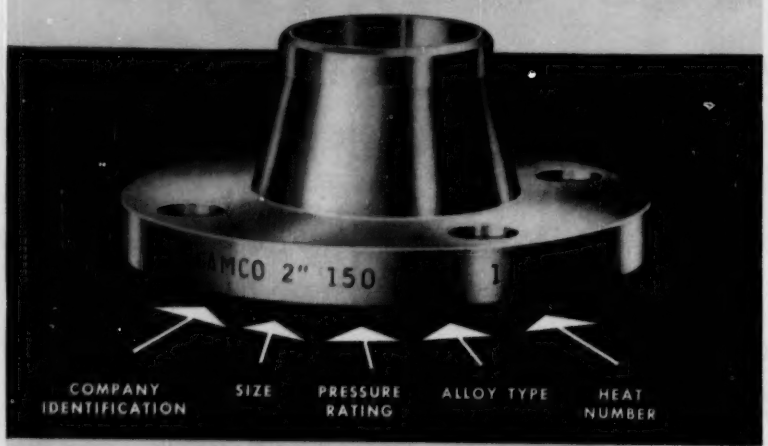
Those are just a few of "Kirk"'s views and comments. But it's that sort of on-the-scene observations that we rate as the essential element of our news. It gives the color, perspective, dimension.

And we hope it helps to provide you with the kind of information—on developments both here and abroad—that you find most useful.

Editor


It pays to...
Dry Natural Gas
with Davison Silica Gel!
Data Proves That Silica Gel Is Best Drying Agent For Natural Gas
Field performance data shows that Davison Silica Gel is the superior drying agent for natural gas. No other drying agent offers all the advantages to be found in Davison Silica Gel.
• High capacity for moisture
• Resistance to fouling gives long desiccant life
• Economical to use because of fewer reactivations
• Dries to lower dew point
• High capacity at elevated temperatures—110-120°F.
• Excellent attrition resistance
• Low pressure drop
For detailed information and field performance data on the use of Davison Silica Gel for the drying of natural gas, write for Technical Bulletin No. 201.
Progress Through Chemistry
DAVISON CHEMICAL COMPANY
Division of W. R. Grace & Co.
Baltimore 3, Maryland
PRODUCERS OF: CATALYSTS, INORGANIC ACIDS, SUPERPHOSPHATES, TRIPLE SUPERPHOSPHATES, PHOSPHATE ROCK, SILICA GELS AND SILICOFLUORIDES.
SOLE PRODUCERS OF DAVCO® GRANULATED FERTILIZERS.

QUALITY...
SERVICE...
VALUE
you get all 3
when you specify
CAMCO
Stainless Steel Pipe Fittings



QUALITY . . . All CAMCO fittings are permanently marked with the CAMCO trade name as evidence of complying to the high standards of CAMCO quality.
SERVICE . . . We are able to expedite delivery because our products are sold and stocked by distributors throughout the country and backed by large stocks at the plant for requirements in excess of normal.
VALUE . . . All our facilities are geared to the manufacture of STAINLESS STEEL FITTINGS *only* . . . the economies resulting from this specialization are passed on to you, providing DROP FORGED fittings, where possible, for no more than the cost of cast fittings.

One source for all your Stainless Steel Fitting Requirements
SCREWED • FLANGED • WELDING

FREE!

Use attached coupon for Flange Dimensional Slide Rule and Catalog covering complete line.

CAMCO Products, Inc. 445 State Street North Haven, Conn. W

☐ Please send Flange Dimensional Slide Rule.
☐ Catalog No. 653 covering complete line.
☐ Furnish address of area distributor.

Name .....
Company .....
Address .....
City ..... State .....

THE *Quality* LINE IN STAINLESS

CAMCO PRODUCTS, INC.

445 STATE STREET
NORTH HAVEN, CONN.

OPINION.....

Photo Patents

TO THE EDITOR: We thought your "Target" (*June 4*) discussing photosensitive plastics, and mentioning our product, Calimar, did a good job in a difficult field. However, it might be of additional guidance to your readers to know that we have basic patent applications well along in this area . . . Thus, it is our belief that the industrial opportunities lie in the manifold potential uses of Calimar rather than in refining the process we pioneered. . .

The Calimar process works in many plastics other than vinyl chlorides . . . we plan only to supply such photosensitive pastes and solutions for use by others. . .

S. B. ELLIOTT
President
Ferro Chemical Corp.
Bedford, O.

DATES AHEAD . . .

Society of the Chemical Industry, annual meeting, University of Birmingham, Birmingham, England, July 11-16.

American Soybean Assn., Natl. Soybean Processors Assn., joint meeting, Netherlands Plaza Hotel, Cincinnati, Aug. 29-31.

National Agricultural Chemicals Assn., annual meeting, Essex and Sussex Hotel, Spring Lake, N.J., Sept. 7-9.

Federal Wholesale Druggists Assn., annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va., Sept. 11-14.

American Chemical Society, 128th national meeting, Minneapolis, Minn., Sept. 11-16.

National Petroleum Assn., annual meeting, Traymore Hotel, Atlantic City, Sept. 14-16.

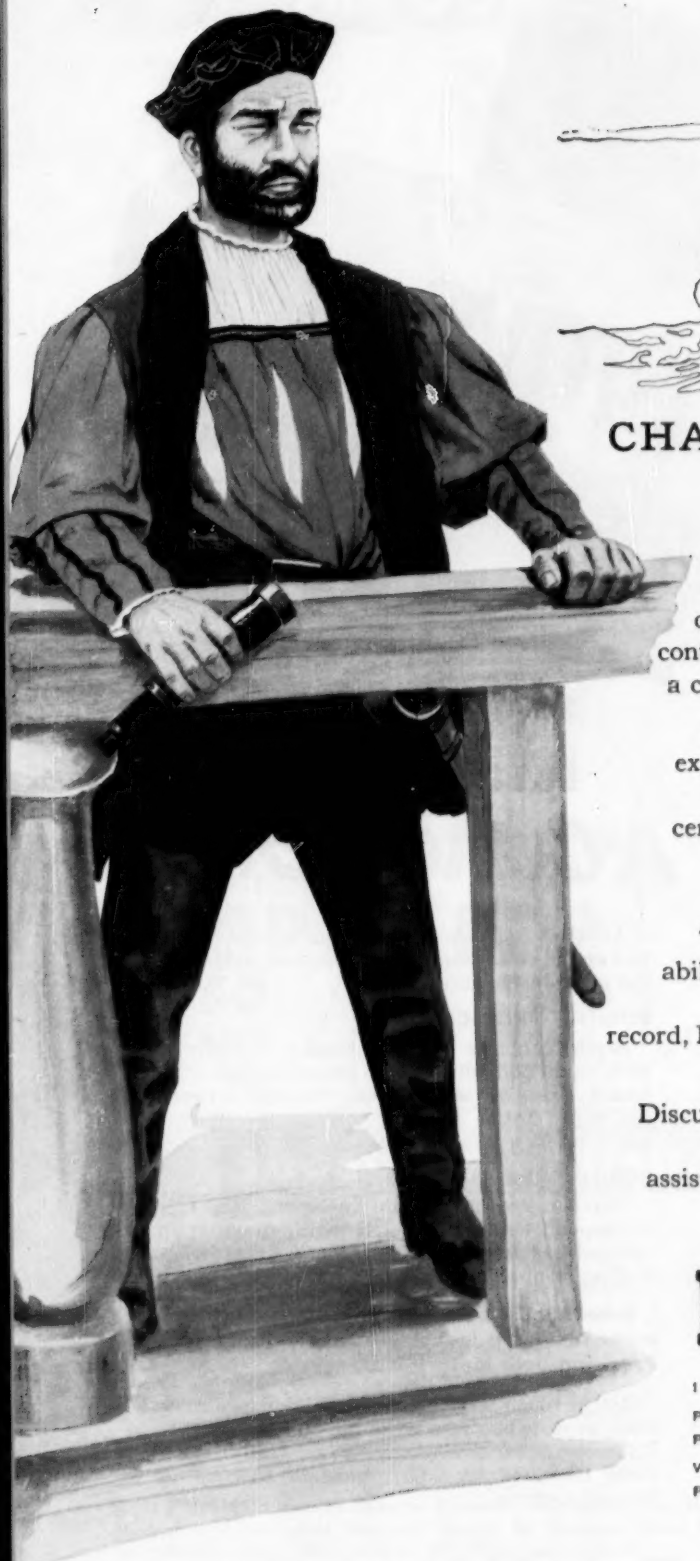
Packaging Machinery Mfg. Institute, annual meeting, The Homestead, Hot Springs, Va., Sept. 15-18.

American Assn. of Textile Chemists and Colorists, Atlantic City, N.J., Sept. 22-25.

Atomic Industry Trade Fair, Sheraton-Park Hotel, Washington, D.C., Sept. 26-30.

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N. Y.



CHARTING A COURSE FOR THE FUTURE

Like the rugged seafarers of an earlier century, modern industrial organizations are continually faced with the problems of charting a course which will ensure their future success.

And when the designated route requires the expansion or modernization of their processing facilities, these organizations must be certain that the construction firm selected for the job will be one with an outstanding record of past achievements.

Throughout the world, Procon has shown its ability to handle any process construction work efficiently and economically. With such a record, Procon has enabled its many clients to enjoy the benefits of rapid on-stream operations.

Discuss your next process construction job with a Procon engineer. You'll find him ready to assist you in planning your course for the future.

PROCON *Incorporated*

1111 MT. PROSPECT ROAD, DES PLAINES, ILLINOIS
PROCON (CANADA) LIMITED—40 ADVANCE ROAD, TORONTO
PROCON (GREAT BRITAIN) LIMITED—112 STRAND, LONDON
WORLD-WIDE CONSTRUCTION FOR THE PETROLEUM, PETROCHEMICAL, AND CHEMICAL INDUSTRIES

PROCON®

ON ALL NEW RELIANCE A-C. MOTORS

All new Reliance A-c. Motors provide these two essentials to trouble-free operation in hazardous or corrosive atmospheres . . .

POSITIVE PROTECTION

A pure neoprene gasket encloses each lead wire with an individually molded pressure knob. This gasket forms a positive protective seal between the motor frame and the corrosion-proof, cast iron conduit box.

POSITIVE IDENTIFICATION

Numbers on the pressure knobs and lead lugs correspond with a numbered wiring diagram on the stainless steel nameplate. Identification for installing or rewiring is positive and easy.

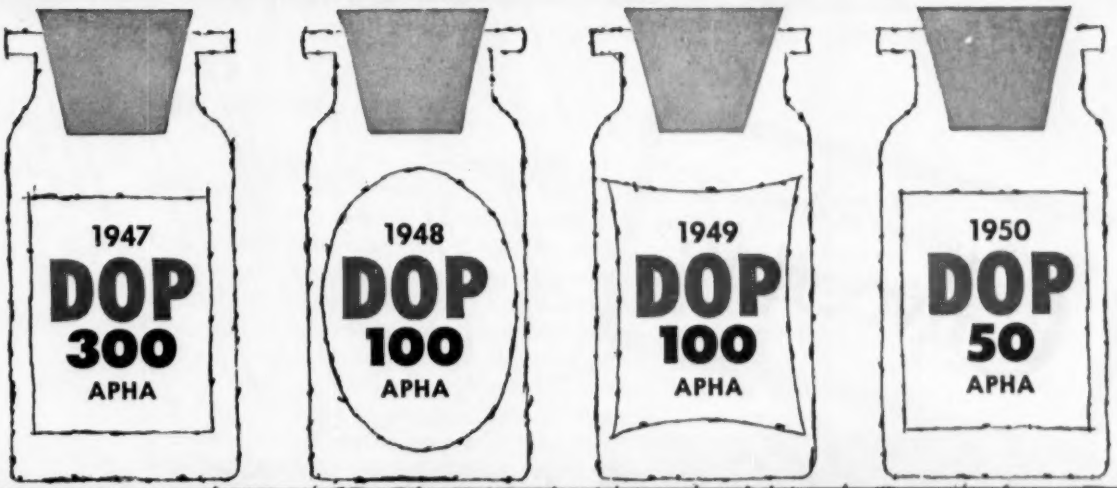
Another Reliance engineered development to assure industry a Totally-Protected, Precision-Built Motor!

Get in touch with your nearest Reliance sales office or distributor, or write for bulletin B-2401. *Reliance Electric & Engineering Co., 1126 Ivanhoe Road, Cleveland 10, Ohio; Canadian Division — Welland, Ontario.*

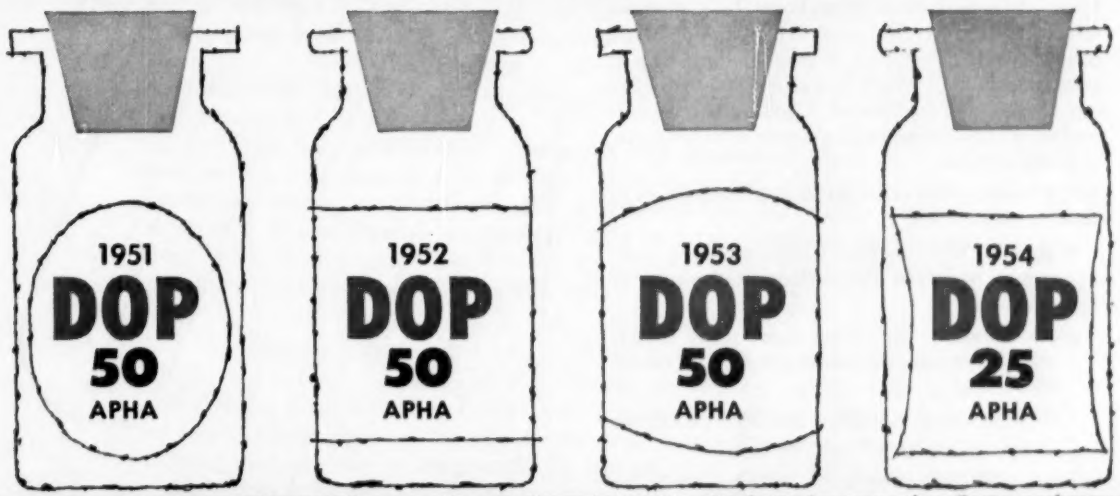
B-1491

RELIANCE ELECTRIC AND ENGINEERING CO.

The DOP color standards



of the industry have been—and are—



those established by Eastman

Before Eastman began production of dioctyl phthalate the accepted industry color standard was 300 APHA.

The first Eastman specifications in 1948 called for production of a 100 APHA dioctyl phthalate. Then in 1950, this was lowered to 50 . . . and in 1954, to only 25.

Eastman has led the way in the steady improvement of DOP quality. New production and refining methods have produced in today's Eastman DOP a truly high quality dioctyl phthalate whose combination of low color, low odor, low acidity, high heat stability and high ester content is unsurpassed.

We invite you to test the high quality of Eastman DOP in your own laboratory or in your own formulations. Write for specifications and sample quantities.

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tenn.; New York—260 Madison Ave.; Framingham, Mass.—65 Concord St.; Cincinnati—Carew Tower; Cleveland—Terminal Tower Bldg.; Chicago—360 N. Michigan Ave.; Houston—412 Main St.; St. Louis—Continental Bldg. **West Coast: Wilson Meyer Co.,** San Francisco—333 Montgomery St.; Los Angeles—4800 District Blvd.; Portland—520 S. W. Sixth Ave.; Salt Lake City—73 S. Main St.; Seattle—821 Second Ave.

Eastman
CHEMICAL PRODUCTS, INC.
KINGSPORT, TENNESSEE
subsidiary of EASTMAN KODAK COMPANY

ADVANTAGES FOR ALKYDS . . . WITH

Glycerine

500°F

420°F

EASIER COOKING . . . *whatever the temperature*

Years of actual plant experience have demonstrated that Glycerine makes cooking of alkyd resins easier. Danger of gelling in the kettle is greatly reduced—which helps prevent costly tie-ups of men and equipment. Cooking can be carried on without complications over a wider range of temperatures.

And Glycerine has other important advantages in making alkyds, too:

- Its low MW/Hydroxyl ratio makes a wide range of resin properties economically feasible.
- Its chemistry has been thoroughly evaluated. Methods are perfected and literature abundant.
- Its liquid state simplifies handling problems. There are no bags to lift, no fines.

As year after year proves . . . *nothing takes the place of Glycerine.*

This balanced group of properties keeps **Glycerine's** usefulness growing

HYGROSCOPICITY • STABILITY • HUMECTANT •
SOLVENT POWER • VISCOSITY • NONVOLATILITY • CARRIER • SOLVENT • LUBRICANT • SOFTENER •
NONTOXICITY • TASTE • MW/HYDROXYL RATIO • EMOLLIENT • ANTI-FREEZE • ALKYD BASE •

☑ CHECK AND SEND FOR TECHNICAL DATA

☐ 20-page booklet, "Glycerine Alkyds Tailored to Need"

☐ 12-page booklet on Glycerine standards and specifications

☐ 16-page booklet on Glycerine properties and applications

For your free copy of any or all of these booklets write: **GLYCERINE PRODUCERS' ASSOCIATION** • 295 Madison Ave., New York 17, N. Y.

NEWSLETTER

What rumor of merger can do to boost a company's common stock position was displayed again last week at two widely distant places:

On the Honolulu Stock Exchange, word that the young chemical firm, Pacific Refiners, Ltd., might be merging with Standard Oil of California caused its stock to jump to a three-year high. Asked about the report, Hawaii spokesmen for both firms acknowledged that talks have been held, but claimed they concerned only the solution of "mutual problems" arising from Standard's plan to build a $30-million refinery in the islands.

Meanwhile in New York, the pattern was the same, participants different. Reports circulating among financial circles that Atlas Powder Co. was considering merger with Olin Mathieson boosted Atlas stock from $47½ to $60¾ by market closing July 1.

Management of both companies, however, deny merger possibility.

•

Interesting sideline to the merger hearings going on in Washington last week (*see story, p. 21*) was Olin Mathieson President Thomas Nichols' response to a question concerning his firm's future expansion plans. Nichols says tentative plans running over $100 million have already been approved; $50 million of the total is specifically ticketed for facilities in Alabama and Georgia.

Further: $60 million, admits the Olin Mathieson chief, is being reserved for a development for which no location, as yet, has been selected. Likely candidates: an aluminum plant (for which Olin Mathieson has just received a $74-million tax write-off), units to produce petroleum derivatives (at some Kentucky site), and a wood by-products plant, tentatively scheduled for construction at Huttig, Ark.

•

Almost nine months ahead of its original schedule, Diamond Alkali has put its second (and last) series of chlorine-caustic cells into operation at Muscle Shoals. Initial planning and thinking was that a year or more would elapse after the firm's first series went onstream (last March) before this action would be needed. But exceptionally strong market activity caused the switch in plans.

•

Late last week the U. S. Circuit Court of Appeals conditionally removed the last legal block to sale of General Aniline & Film Corp., but betting still rests on the theory of no sale this year.

Reason: Interhandel (also known as I. G. Chemie), which is suing for return of more than 90% of the stock in GAF, has steadfastly maintained that the only thing preventing its "full disclosure" of the papers the government wants to see is an old (but valid) Swiss economic espionage law.

To ignore that stand now might jeopardize U. S.-Swiss relations—something Eisenhower, in his drive for amicable foreign affairs, will strive to avoid.

•

The week brought still other legal news of chemical industry import:

In an antitrust swing at makers of dry colors, the U. S. Dept. of Justice convinced a federal grand jury in New York that six companies should be indicted for "unlawful combination and conspiracy to restrain competition by agreeing to fix prices, terms, and other conditions of sale." Attorney General Brownell says this is the kind of case he intends to prosecute vigorously. The companies deny they had any intention to violate the Sherman Act, but say it's hard to tell just what that law proscribes. One company spokesman predicted a consent settlement "eventually."

Named in the indictment: Holland Color & Chemical (Holland, Mich.); Imperial Paper & Color Corp. (Glens Falls, N. Y.); Sherwin-Williams (Cleveland); Sterling Drug (New York); together with Standard Ultramarine & Color (Huntington, W. Va.), and American Cyanamid (New York), the two firms that figured in antitrust action on ultramarine blue last year (*CW, Nov. 13, '54, p. 22*).

•

And in Little Rock, Ark., the backers of Westmoreland Manganese Corp. say they're preparing to appeal Judge Harry Lemley's decision last week to let the U. S. foreclose on the Westmoreland plant for recovery of more than $2.8 million advanced by the government for construction of the uncompleted plant. Trial had been running off and on since last March (*CW, June 18, p. 24*).

•

Vulnerable at the polls, but invincible in courts—that's the way fluoridation of public water supplies shapes up this week. Its latest triumph: a unanimous ruling last week by the Ohio State Supreme Court that fluoridation does not infringe any Constitutional liberties. This decision is expected to make early fluoridation of Cleveland's water a virtual certainty.

And in St. Louis, Mayor Raymond Tucker—whose administration already has ordered fluoridating equipment—is reported all set to veto an antifluoridation measure if the aldermen should pass it.

•

One estimate this week states baldly that sales of reserpine and chlorpromazine are so good this year that the drug makers appear poised on the brink of a surge—analogous to the early days of sulfa and antibiotics.

Sales of both drugs have skyrocketed; realization of mental chemotherapy's potential (perhaps a half-billion dollar-a-year business) has scarcely begun: "The penicillin and tetracycline of the psychiatric drugs are still to come."

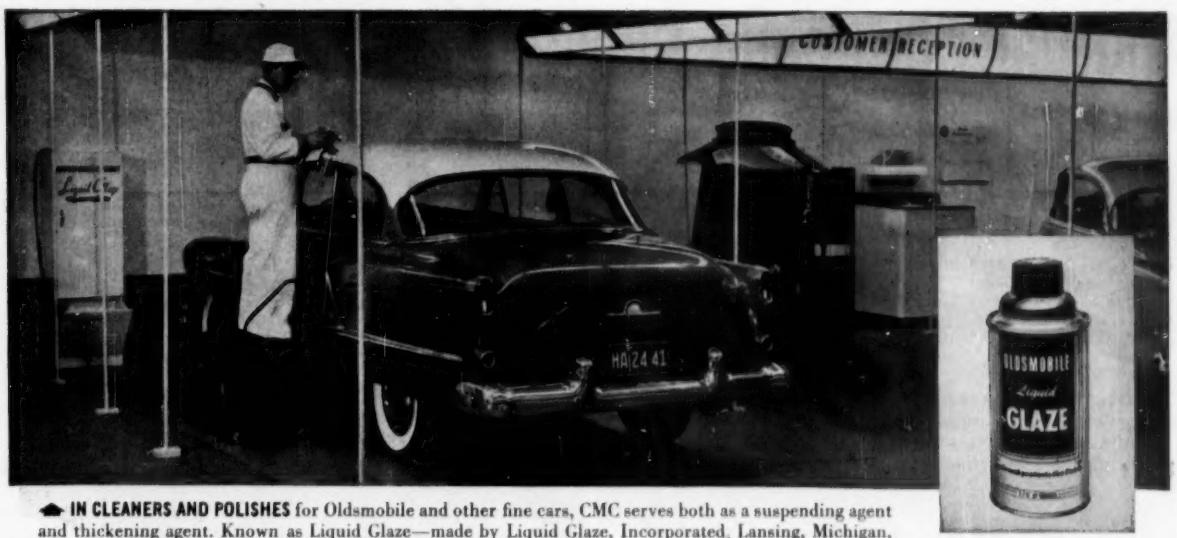
•

A definite hiatus is gaping in Tidewater Associated Oil Co.'s efforts to break into petrochemical production. Plans to build an ammonia plant have been dropped; company executives are still waiting for enough firm ethylene customers before going ahead full steam with work on contemplated ethylene-producing units at Avon, Calif.

It seems the only firm thing about Tidewater's chemical plans now is the company's entry into petrochemicals through a $110-million refinery under construction in Delaware.

•

A polyester resin glider, built by the Tokyo Light Plane Manufacturing Co., is creating more than a modicum of interest—both in Japan and abroad. Having already passed resistance tests held at the Nitto Spinning Co. research laboratory, the glider will be put through a test flight later this month.



IN CLEANERS AND POLISHES for Oldsmobile and other fine cars, CMC serves both as a suspending agent and thickening agent. Known as Liquid Glaze—made by Liquid Glaze, Incorporated, Lansing, Michigan, these polishes containing CMC have long shelf-life; give lacquer and enamel finishes lasting protection against weathering and the chemicals used on highways in winter months.

TO KEEP COMPOUNDS IN SUSPENSION

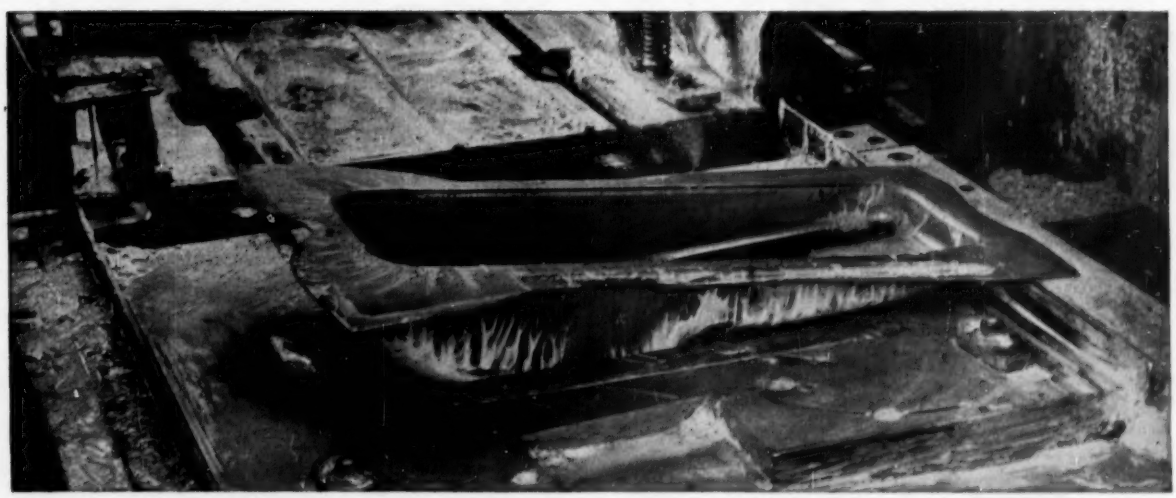
THE KEY IS CMC

These two widely different applications of purified Hercules® CMC indicate the many ways in which the suspending properties of this versatile water-soluble colloid can be used to good advantage for a diversity of industrial and consumer products.

CMC not only keeps emulsions emulsified indefinitely, but can at the same time serve as a film former and thickening agent. It is compatible with many gums, plasticizers, and resins, and is insoluble in organic solvents. CMC's exceptionally high purity (99.5+%) has firmly established the material as a water binder and stabilizer in numerous types of consumer and industrial uses.

When writing for testing sample, an indication of the use you have in mind will help us determine the proper types of CMC for your specific needs.

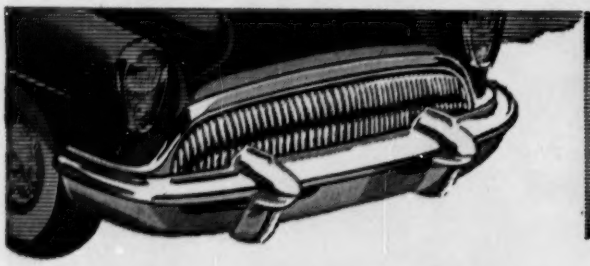
Virginia Cellulose Department
HERCULES POWDER COMPANY
INCORPORATED
992 Market St., Wilmington 99, Delaware



IN AUTOMOTIVE MANUFACTURING, Monco Drawing Compounds made with CMC speed the fabrication of sheet steel parts. Made by The H. A. Montgomery Company, Detroit, Michigan, these CMC-based compounds stay properly mixed—providing a uniform film of "lubricant" that prevents sticking of units in the die.

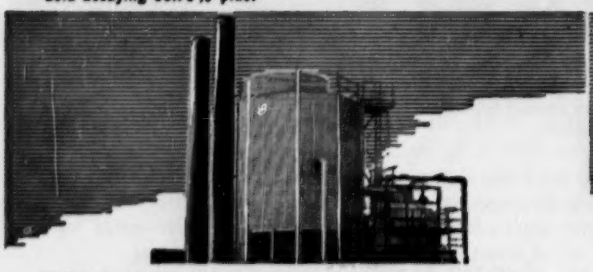
VC66-2

Mutual Chromium Chemicals Cover Industry



Automobile buyers demand Chromium plating for appearance and protection. Mutual supplies the plating industry with chromic acid assaying 99.75% plus.

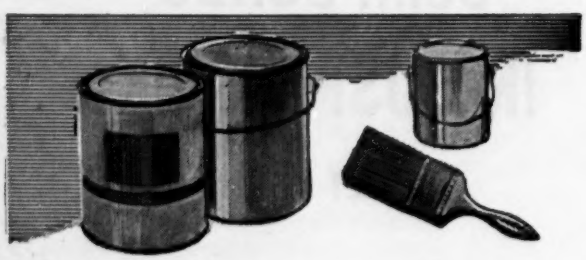
Railroads find that Diesel locomotives with chromium plated cylinder liners extend the periods between overhauling jobs. Another application for Mutual Chromic Acid.



With water becoming scarcer, many industrial users recirculate water in cooling systems. Mutual Chromates effectively control corrosion of equipment.

Tanners of superior leather products turn to Mutual for Sodium Bichromate and Koreon (one-bath chrome tan).

Chromated wood preservatives are specified in an ever-widening list of applications. Mutual Chromates are important ingredients in most such preservatives.



Chrome yellow and chrome green pigments are widely used in paints and printing inks. Mutual Bichromates are the standard of the pigment industry.

Textile dyers rely on Mutual Bichromates for mordanting wool and oxidizing cotton dyes.

Aircraft makers anodize aluminum with Mutual Chromic Acid to prevent corrosion and to form a base for paint.

Sodium Bichromate • Chromic Acid • Sodium Chromate • Potassium Bichromate

MUTUAL CHEMICAL DIVISION

MUTUAL — ALLIED CHEMICAL & DYE CORPORATION

99 PARK AVENUE • NEW YORK 16, N. Y.

Allied Chemical

BUSINESS & INDUSTRY. . . .

NICHOLS, LOVE: Assert positively that their mergers are . . .

No Cause for Concern

The chemical industry's story of merger activity in recent years was laid out before Congress last week by two of the biggest merger-makers of them all—Olin Mathieson Chemical Corp. and Burlington Industries.

Top executives of both companies (Olin Mathieson's President Nichols and Burlington Industries' Chairman Love) gave different reasons for supporting their view—that their mergers in no way threaten U.S. economic security—but received a cold reception from committee members.

Disbelievers? Sen. Estes Kefauver (D., Tenn.), who, along with Sen. Joseph C. O'Mahoney (D., Wyo.), submitted Nichols to a lengthy cross-examination, typified the note of warning. Kefauver told Nichols that he does not know if Olin Mathieson has violated antimerger law, but added: "You are moving along pretty fast."

Kefauver was referring to the pace of growth and expansion Nichols outlined to the subcommittee, including nine mergers or acquisitions made since 1948.

Nichols claimed that Olin Mathieson's expansion has not reduced competition because there is no overlapping between the businesses of the acquired companies. He also discussed the integration program of Olin Industries before the merger with Mathieson, said that the mergers both firms participated in since World War II were "an essential element to the growth from within," enabling them to compete with larger companies already well-integrated and diversified on a national scale.

Kefauver wanted to know if Nichols believed the antitrust laws were not violated so long as a company does not buy out competitors, but expands by going into new fields. Nichols admitted that the antimerger law passed in 1950 was directed against conglomerate mergers as well as horizontal mergers, where competitors are directly eliminated. But he went on to elaborate, said he did not think Olin Mathieson has reached "the danger point"—i.e., the point beyond which it cannot get bigger without violating antimerger law.

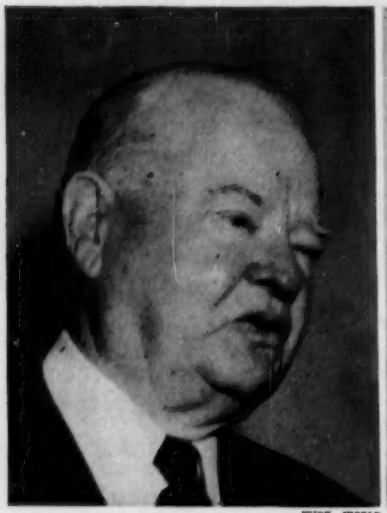
Kefauver then injected into the discussion a Japanese word, "zaibatsu", which, he said, describes the process of putting a whole batch of different companies under one management. If such a thing occurs he says, antitrust law is frustrated by a few companies that get "a stranglehold on the nation's economy." Nichols quipped that he was "flattered" by the suggestion, but that he would personally do everything he could to see that such a situation never developed.

All in the Family

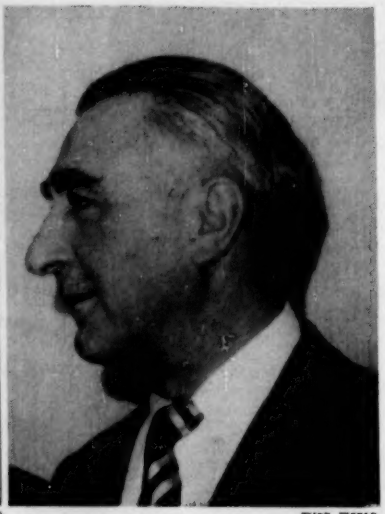
Two expansion moves—both of which had to pass inspection by the U.S. Securities & Exchange Commission because they involved transactions with affiliated companies presumed to be controlled by registered investment firms—bring promise this week of increased titanium and ion-exchange membrane production.

In one development, Rem-Cru Titanium—jointly owned by Remington Arms and Crucible Steel—has received clearance to buy from Crucible for $461,500 some plant facilities at Midland, Pa. Rem-Cru has been leasing part of this property in recent years for titanium melting. The registered investment companies in this case are Delaware Realty & Investment and Christiana Securities, and the connections run like this: Delaware owns 33% of Christiana's common stock, Christiana owns 27% of Du Pont common, Du Pont owns 60% of Remington voting securities, and Remington owns 50% of Rem-Cru.

In the other move, SEC has okayed issue of 42,361 shares of common stock by Ionics, Inc., to American Research & Development Corp. (Boston), in exchange for $305,000 of 5% notes held by American Research. This latter concern – the registered investment company in this case—already owns 76.6% of the 260,368 shares of Ionics' outstanding common stock. The exchange rate will be $7.20/share, the same as the proceeds per share that Ionics is to receive from sale of an additional 150,000 shares through a New York underwriter to raise additional working capital.



WIDE WORLD



WIDE WORLD

HOOVER, KESTNBAUM: Behind their recommendations, a drive on . . .

Cleaning Up Waterways

From two different sources last week came developments regarding care of U.S. water resources that could have a powerful impact on chemical producers.

Advocating a user-charge on all producers who ship through inland waterways was the 12-man Hoover Commission. Toll charges, the report says, should be collected according to tolls set by the Interstate Commerce Commission. Basic reasoning: maintenance and operation of navigation works on the whole system, including the Great Lakes, costs about 29¢/1,000 ton-miles. Bearing this heavy financial load, the government is hard pressed for funds for river-deepening, etc.

Taskmaster Needed: Tossing its weight behind a drive for more federal participation in pollution abatement is another administrative study group—the Commission on Intergovernmental Relations, headed by Meyer Kestnbaum.

States have the primary responsibility of controlling water pollution, the commission says, but the frequency of pollution problems that cross state lines justifies "increased participation of the national government in coping with this hazard . . ."

Saved by Veto

LOOKING to the future, chemical process companies in Texas have cause to be concerned about water supplies; but one immediate threat has been erased by a gubernatorial veto.

Gov. Allan Shivers has refused to sign a water conservation bill that—through a clerical error—would have automatically canceled water rights that have been unused over the past 10 years.

One company heaving a sigh of relief: Dow Chemical, which holds permits for taking 170,000 acre-feet of water per year from the Brazos River, says, "We can't expand unless we know we'll have the water."

Just Warming Up

Basic aluminum producers face the prospect of a continued fuss about shortage of aluminum. Office of Defense Mobilization has matched known supply with estimated demand for the third quarter of this year—and predicted a continuing shortage of metal for fabricators.

Arthur Flemming, ODM director, told a House subcommittee that his diverting a recent 100,000 tons of aluminum from the government stockpile to private use will leave supplies the next three months some 18,000 tons short of estimated requirements.

The July-August-September quarter should have 557,000 tons available for consumption by private industry, Flemming said. This will consist of 393,000 tons of domestic aluminum production, including Anaconda's first production and the 100,000-ton deferment; 100,000 tons of reprocessed aluminum scrap; and 64,000 tons of imported aluminum—almost all from Alcan in Canada.

Estimated consumption needs for the period are 575,000 tons. No plan has been advanced to close the gap between needs and supplies. Only another diversion from deliveries to the stockpile could be effective this close to the third quarter.

Old Story, New Twist

A novel attack on the constitutionality of the Reciprocal Trade Agreements Act of 1934 and the General Agreement on Tariffs and Trade (GATT) headed for a preliminary showdown last week when the Federal District Court, Washington, D.C., took under advisement a government motion to dismiss the suit filed by Morgantown Glassware Guild, Inc., against Secy. of Treasury George M. Humphrey and other government officials.

The government, arguing at a hearing before Judge Burnita S. Matthews, urged the court to dismiss the suit on the grounds that the U.S. Customs Court—not the District Court—has sole jurisdiction over the case and that Morgantown has no legal standing to sue the government.

Morgantown also raised a matter now under advisement by Judge Matthews: it wants to amend its original complaint to add a charge of conspiracy between Secy. Humphrey and Secy. of State John Foster Dulles—"conscious parallelism"— in reducing rates of import duties on foreign homemade glass under the Reciprocal Trade Act. The amended complaint also seeks to include a charge that these conspiratorial acts amount to an unreasonable restraint of trade and competition.

If Judge Matthews grants the government motion to dismiss, Morgantown probably will appeal the ruling to the Court of Appeals; the government can be expected to appeal if it loses before Judge Matthews. But whether the court will ever get down to the merits of the case—the constitutional issue—remains doubtful.

Open Season on Trademarks

That the "buyers' market" is really here insofar as the chemical process industries are concerned can be seen this week in the welter of disputes over consumer-item tradenames—those "handles" that form a link of familiarity between the buying public and the manufacturers.

Large, small, and medium-size companies are contestants in current tiffs over tried and prized brandnames (*see box, below*); and numerous legal principles are involved. But the only clear-cut moral in the two cases recently decided in the U.S. Court of Customs and Patent Appeals at Washington is that you shouldn't be discouraged at one adverse ruling on such a claim, because an appeal to the next higher tribunal is quite likely to bring an opposite finding.

Oldest of these conflicts started back in 1948, when Colgate-Palmolive asked the U.S. Patent Office to register the word "Brisk" as a trademark for certain cosmetic products. (There had been a "Brisk" shaving cream since 1928.) Objection came from John H. Breck, Inc. (Springfield, Mass.), claiming use of the word "Breck" since 1915 and registration in 1931.

Double Reversal: The Patent Office's examiner of interferences sustained Breck's objection, holding that the two tradenames had so strong a resemblance as to be likely to confuse consumers. But he was reversed by the assistant patent commissioner.

A second reversal came last fortnight when the appeals court ruled in favor of Breck. Associate Judge Eugene Worley wrote that there was too much similarity in "over-all appearance and sound" when applied to the same kind of products. This may not be the end of this contest, since it's understood that Colgate plans to ask for a rehearing.

Two reversals also stand out in the three-part clash between Minnesota Mining & Mfg. Co. and Minnesota Paints, Inc., over tradenames on coated abrasives, ready-mixed paints and wood stains. The court declared that neither company is entitled to exclusive use of "Minnesota" as a tradename, inasmuch as that word is primarily geographic and thus in the public domain.

Same Name, New Formula: Another complex case is that between Dormin, Inc., and the Paradormin Co., in which a hearing is to be held in New York later this month. Both names were previously used with different formulations, but now they're both being applied to sedatives based on methapyrilene hydrochloride. Dormin has posted bond and obtained a temporary injunction, but Paradormin insists that its 1939 trademark is still valid and that Dormin will have to retreat.

Also a question of similarity: "Ski," used on various cosmetic products by Antoine de Paris since Nov. '36; and "Sea and Ski," brandname of a suntan cream made by Rolley, Inc., and distributed by McKesson & Robbins.

In a third case pending in U.S. District Court at New York, it's a question of identical names for cosmetic products. The Marilyn Shoppe of Rye, N.Y., asserts that it has been using the name "Dream Stuff" since 1946 and that the Andrew Jergens Co. of Cincinnati has "embarked on a concerted drive to cause the tradename to be abandoned."

In Courts and on Counters: Rival Tradenames

"BRECK" vs "BRISK"

"DORMIN" vs "PARADORMIN"

"DREAM STUFF" (Marilyn Shoppe) vs "DREAM STUFF" (Andrew Jergens Co.)

"SKI" vs "SEA and SKI"

MARLAND: Personally courting chemical executives.

No Wobble Wanted

It's more than likely that one morning soon, numbers of chemical executives will find a luncheon invitation from West Virginia Gov. William Marland sandwiched in their morning mail. That's because the barn-storming governor is seeking personally to sell West Virginia's desirability as a plant location.

What's spurring West Virginia's governor to act as traveling salesman? Not political reasons apparently.* Instead it appears to be an open admission that the state is in economic trouble, needs diversified manufacturing to overcome a lopsided dependence on mining.

"To decrease that dependence," says the 37-year-old governor, "we're going after chemical, metalworking, mass-produced apparel, and woodworking industries."

Prompting the Action: Marland's move was prompted by a recent Arthur D. Little economic survey revealing that unemployment and declining incomes in mining (and agriculture) will continue to plague West Virginia until manufacturing industries sprout big enough to stabilize the wobbly economic structure.

What lures does West Virginia offer chemical plants? Primarily, abundant water supplies, big salt brine deposits, rich coal and natural gas

* West Virginia governors can't be re-elected to second terms.

resources. The climate's a favorable factor, too, and there's plenty of skilled labor. Important also: within 500 miles of central West Virginia lie four of the five largest U.S. markets (New York, Chicago, Philadelphia, and Detroit), more than half the country's population.

Still Insufficient: Unfortunately, however, despite the excellent past growth of chemical industry in West Virginia (today the state accounts for 4% of all U.S. chemical activity), erratic boom-and-bust periods still persist from an overdependence on mining. And that's the wobble Governor Marland is determined to eliminate.

COMPANIES. . . .

The Port Commission of Tacoma, Wash., has accepted a $20,960 bid from the General Chemicals Division, Allied Chemical & Dye Corp., for two lots in Tacoma's tidelands industrial district. General will use the land to build liquid aluminum sulfate units, designed to use acids from Tacoma sources and imported bauxite.

•

Gulf Sulphur Corp. (Houston) has asked the Securities & Exchange Commission for authority to sell $4.5 million in convertible debentures. SEC says the company will use $225,000 of the money netted from the stock sale to pay interest on debentures to Juy 1, 1956; the remainder will be employed to pay off a promissory note held by the Tehuantepec Co.

•

Two more company incorporations in Dover, Del.:

- Calro Chemicals Corp., listing authorized capital stock at $8,000.
- Mechano-Chemical Development Corp., listing authorized capital stock at $250,000.

•

Stockholders of the Chemical Fund, Inc. have approved a two-for-one split of the company's capital stock. Par value is changed from $1/share to 50¢/share.

•

Officers of Hooker Electrochemical Co. and Niagara Alkali Co. (both of Niagara Falls, N.Y.) now admit that they are negotiating for a merger of Niagara into Hooker. Among terms of the agreement now under discussion: issuance of 1.6 shares of Hooker common for each of the 600,000 outstanding shares of Niagara Alkali.

EXPANSION. . . .

Sulfur: The Sulphur Exploration Co. (Houston) will start construction within the next 90 days of a sulfur recovery plant on the High Island Dome in Galveston County. Sulphur Exploration holds sulfur rights on the dome through a lease agreement with Stanolind Oil and Gas Co., has increased to more than 50 the number of sulfur test wells that have been core-drilled into the dome.

•

Aluminum: Olin Mathieson Chemical Corp. is eyeing several sites in West Virginia for its contemplated $75-million aluminum plant. The New York firm last week was granted an extension of its tax write-off—to June 18, 1956—and permission to revise its capacity estimate to 60,000 tons/year of primary aluminum.

•

Ammonia: Officials of Thunderbird Corp. are completing final arrangements this week for their contemplated $13-million ammonia plant near Kyrene, Ariz. Plans for the plant are being drawn up by Ebasco Services, Inc. (New York); it's hoped that production (of ammonia, urea, ammonium phosphates, and sulfates, etc.) will start sometime next summer.

•

Ammonium Bicarbonate: Allied Chemical, Solvay Division's plant at Syracuse, N.Y., is undergoing expansion designed to lift production capacity by 25%. It is expected that this additional material will be available for sale before year's end.

•

Wallboard: National Gypsum Co. will build a multimillion-dollar wallboard cover paper manufacturing plant in Calhoun County, Ala., as another step in its $75-million expansion program. Capacity is listed at 150 tons/day of paper—to be shipped to National Gypsum's processing plants in Savannah, Ga., Baltimore, Md., New Orleans, La., and Shoals, Ind. (the latter two plants are currently under construction).

On Schedule at Lima

CLOSE TO COMPLETION this week is Sohio's 300-ton/day anhydrous ammonia plant at Lima, O. All major equipment is set; pipe work is filling in rapidly. Next units scheduled for completion: a 180-ton/day nitric acid plant due on-stream Nov. 1, and urea units due to be placed in operation by Jan. '56.

In charge of the entire project: Sohio's Petrochemical Dept.

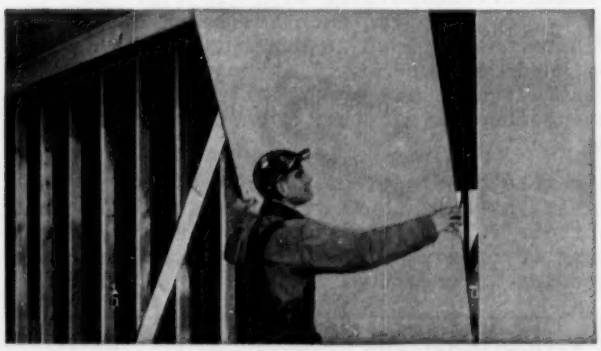
DOW

Dowicide Preservative

cuts building costs by opening dramatic new uses for insulation board

Popular cellulosic materials are protected against rot, mildew and termites by the addition of Dowicide 7 (PENTAchlorophenol)

Building board of several different types is carefully treated with Dowicide Preservative by manufacturers to help prevent deterioration from mold, mildew and termites.



Examination of the samples above tells you what's happened to insulation board. They are identical in all but *one* vital respect: piece at *top* was treated by manufacturer with Dowicide® 7, one of Dow's fourteen effective industrial preservatives. Exposure to severe use conditions shows *treated* sample *completely free* of rot and mildew that are well on the way to deteriorating the *untreated* board.

In addition to lowering maintenance expense, Dowicide-treated insulation board cuts material and labor costs through its easy, fast installation as sheathing, lath, shingle backer, siding, roof insulation, interior panels and other applications.

Among the businesses that increase manufacturing efficiency or hold top product quality with the help of Dowicide Preservatives are the petroleum, paint, paper and pulp, adhesives, textile, agricultural, transportation, leather, cordage and other industries. *Your* processing, packaging or selling might benefit markedly through use of *one or several* of these versatile Dowicide products. The Dow laboratories will consult with you regarding individual preservative problems. For more information, mail coupon to THE DOW CHEMICAL COMPANY, Midland, Michigan.

THE DOW CHEMICAL COMPANY
Dept. DP 651A-1, Midland, Michigan

Please send me further information on the uses of Dowicide Preservatives.

Name_____
Title_____
Company_____
Address_____
City_____ Zone_____ State_____

you can depend on DOW CHEMICALS

DOW

(Advertisement)

CHEMICALS OUTLOOK

July, 1955

This news bulletin about Wyandotte Chemicals services, products, and their applications, is published to help keep you posted. Perhaps you will want to route these and subsequent facts to interested members of your organization. Additional information and trial quantities of Wyandotte products are available upon request . . . may we serve you?

PLURONICS IMPROVE SHAMPOO FORMULATIONS

Makers of shampoos and other hair preparations are benefiting from the many advantages offered by the Pluronics* -- Wyandotte's new series of 100%-active nonionic surface-active agents. For -- as the Pluronics are a series -- it is possible to select a better balance of desirable properties for a given formulation.

For example: since grease removal and other properties of the Pluronics are directly related to the hydrophobic-hydrophilic balance, a Pluronic having the desired level of ability to remove grease may be selected from the series. By leaving the proper amount of oil, the Pluronics leave the hair in soft, manageable condition. Manufacturers of soap-based shampoos have found that the excellent lime-soap dispersant properties of the Pluronics improve the rinsability of their products in hard-water areas.

Extensive tests have shown that the Pluronics are neither irritants nor primary sensitizers for human skin. They have an unusually low order of eye irritation. Also, they have a low order of oral toxicity. These "plus" factors work to good advantage in all hair preparations, including dyes. And, thanks to exceptional detergency and soil suspension, the Pluronics are ideally suited for cleaning hair.

In addition, the Pluronics are compatible with all types of ingredients commonly used in shampoos, such as: soap and other anionic surfactants; quaternaries used in dandruff-remover shampoos; water of any hardness; and auxiliary materials, like dyes and perfumes. The Pluronics are practically odorless. And, although low foaming themselves, they may be successfully used with high-foaming agents.

Because of the many possible combinations of properties, it is vital that you thoroughly investigate the Pluronics in your own laboratory to realize their full benefits. If you are planning new products, or seeking to improve present lines, write for our data sheet on the Pluronics in shampoos.

WYANDOTTE OFFERS NEW BOOK ON SODA ASH

A helpful, new 96-page book on Wyandotte Soda Ash is now available, and it's packed with product and application information . . . technical data, sampling methods, tips on handling and storage -- even a complete appendix, with tables, charts, conversion factors. The supply is limited.

*REG. U.S. PAT. OFF.

Wyandotte CHEMICALS

WYANDOTTE CHEMICALS CORPORATION
WYANDOTTE, MICHIGAN • OFFICES IN PRINCIPAL CITIES

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA • CALCIUM CARBONATE • CALCIUM CHLORIDE • CHLORINE • MURIATIC ACID • HYDROGEN • DRY ICE
GLYCOLS • SYNTHETIC DETERGENTS (anionic and nonionic) • CARBOSE ® (Sodium CMC) • ETHYLENE DICHLORIDE • DICHLORODIMETHYLHYDANTOIN
CHLORINATED SOLVENTS • *OTHER ORGANIC AND INORGANIC CHEMICALS*

NEW STRENGTH FOR NEW ENGLAND

...as GIRDLER designs and builds Anhydrous Ammonia Plant for Northern Chemical Industries, Inc.

NEW ENGLAND agriculture and industry will soon have its first local source of anhydrous ammonia, in the new Searsport, Maine, plant of Northern Chemical Industries, Inc., an affiliate of The Summers Fertilizer Company, Inc. The new plant is being engineered by Girdler to use *low-grade oil* as a raw material . . . the first such plant in the United States to do so.

The Girdler-built plant will produce 125 tons per day of anhydrous ammonia, a portion of which will be used to produce nitric acid and nitrogen solutions. The anhydrous ammonia and nitrogen solutions will be used for direct soil application and in mixed fertilizers. A part of the anhydrous ammonia will be marketed for industrial use.

Girdler has broad experience in designing and building plants to produce ammonia, ammonium nitrate, and other agricultural chemicals . . . and in construction of high-temperature, high-pressure process plants. For more information on this and the many other types of plants listed below call the nearest Girdler office today.

The GIRDLER Company

A DIVISION OF NATIONAL CYLINDER GAS COMPANY

LOUISVILLE 1, KENTUCKY

GAS PROCESSES DIVISION: New York, San Francisco
VOTATOR DIVISION: New York, Atlanta, Chicago, San Francisco
In Canada: Girdler Corporation of Canada Limited, Toronto

GIRDLER DESIGNS processes and plants
GIRDLER BUILDS processing plants
GIRDLER MANUFACTURES processing apparatus

VOTATOR DIVISION:
Complete Edible Oil Plants;
Continuous Processing Apparatus for:

Chemicals	Salad Dressing
Textile Size	Soap
Shaving Cream	Margarine
Lubricating Grease	Lard
Paraffin Wax	Shortening
Paper Coating	Bakery Ingredients
Resins	Confectioneries
Strained Food	Citrus Concentrates

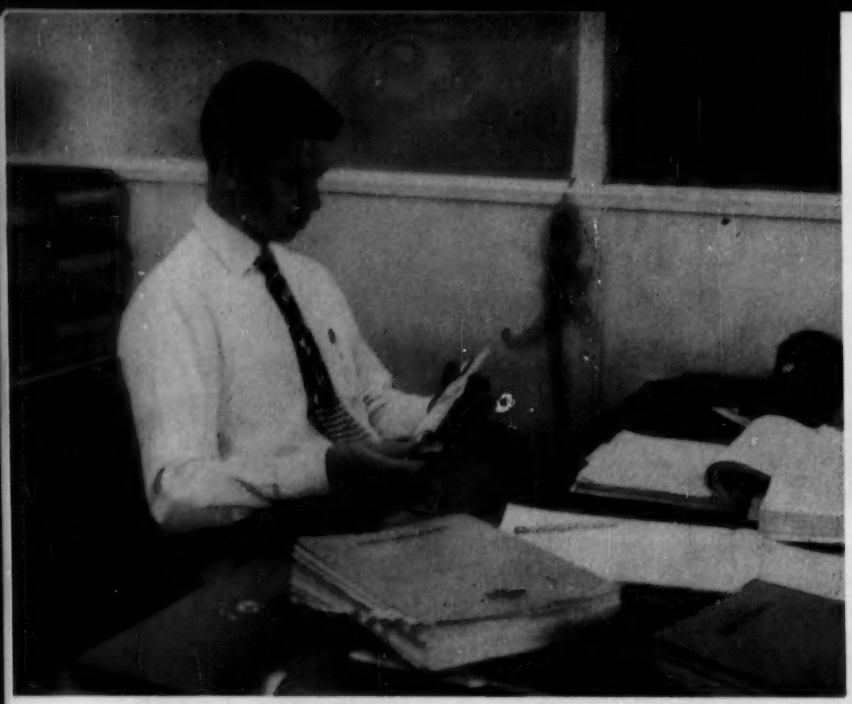
And other Products

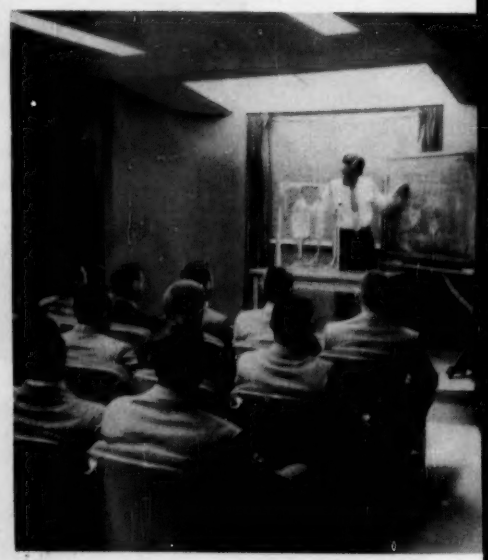
GAS PROCESSES DIVISION:

Chemical Processing Plants	Ammonia Plants
Hydrogen Production Plants	Sulphur Plants
Hydrogen Cyanide Plants	Acetylene Plants
Hydrogen Chloride Plants	Synthesis Gas Plants
Plastics Materials Plants	Carbon Dioxide Plants
Ammonium Nitrate Plants	Gas Purification Plants
Catalysts & Activated Carbon	Fertilizer Plants

THERMEX DIVISION:
High Frequency Dielectric Heating Equipment
Applicable to:

Rayon Cake Drying	Foam Rubber Jelling and Pre-Heating
Cellulose Sponge Drying	Foam Rubber Pre-Heating for Cure
Foam Rubber Drying	Plastic Preform Pre-Heating
Automotive Trim Heat-Sealing	Foundry Core Baking
Vinyl Foam Fusing	Wood Bonding
Plastisol Fusing	





UNDERGRADUATE ENGINEERS: Work at assigned projects, reap benefits from company lectures . . .

Summer Jobs with Futures

This summer for 19 college juniors (all budding chemical, civil, and mechanical engineers) a between-sessions job will spell more than "catch as catch can" summer employment. Instead, it will mean a chock-full 7½ weeks of supervised training, weekly lectures, films, plant inspection tours. Tossed in for good measure: plenty of free-time rumpusing in New York.

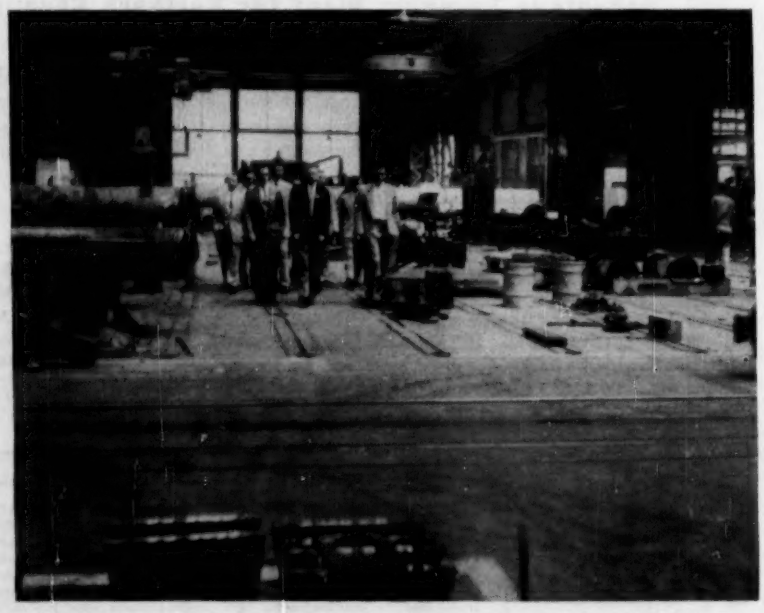
In capsule form, that's what M. W. Kellogg Co. will offer selected undergraduate engineers scheduled to attend its fourth Summer Institute. And, although Kellogg has attempted such sessions before, this summer's version is the most detailed program the company has sponsored so far.

"We feel our junior institute is a fine arrangement for both student and company alike," says Martin Coyne, Kellogg personnel man. "It gives future engineers a chance to tussle with Kellogg activities before leaving school, gives them first-hand experience in our kind of industry." They get an opportunity to build relations with top management; and the job pays better than do most average non-technical summer jobs.

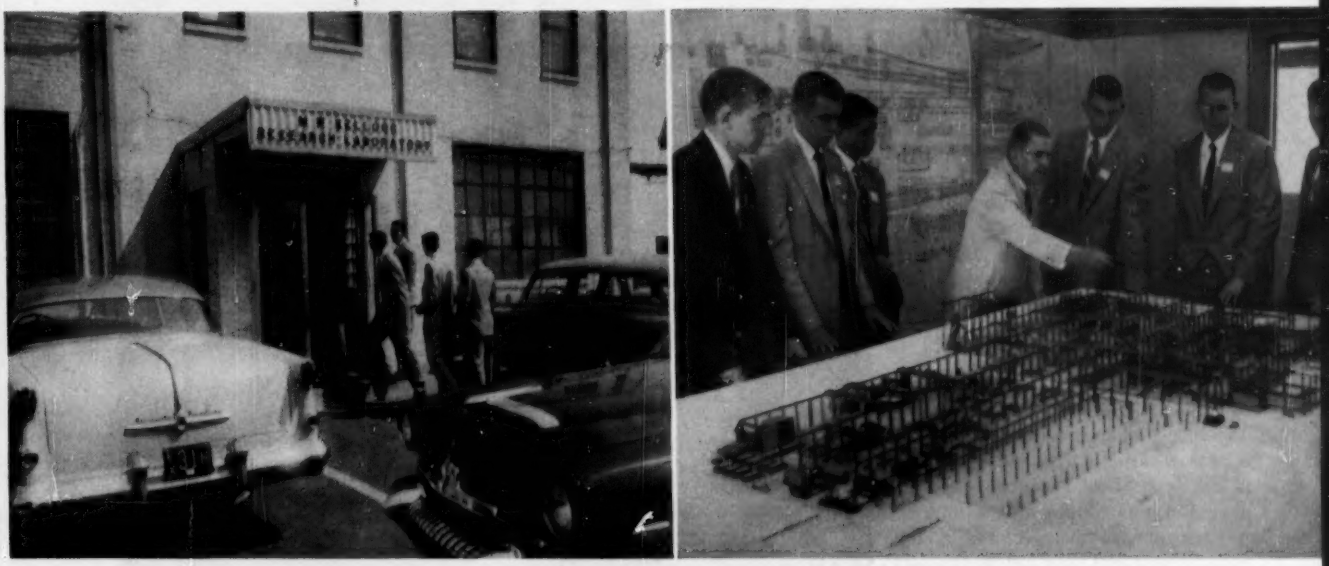
Judging the value of the institute from the company's viewpoint: it's profitable public relations, and a sure-fire means of spotting top-flight young job candidates early.

Manpower quotas become easier to fill, too. To date, Kellogg executives estimate that about 75% of their institute alumni are now full-fledged company employees. Moreover, they expect this year to hike the total number materially.

Important Factor: Actually, therefore, the institute is now an important extension of Kellogg's regular college recruitment activities. This year alone, six company personnel men will seek manpower on some 40 college campuses, and contact 80 more schools by mail. Further, they'll keep in close touch with some 800 college professors. But in spite of this blanket coverage, some students still aren't



IN KELLOGG'S 'BIG SHOP': Students get process equipment insight . . .



. . . jaunt to Jersey City operations, rub shoulders with Kellogg top management on design problems.

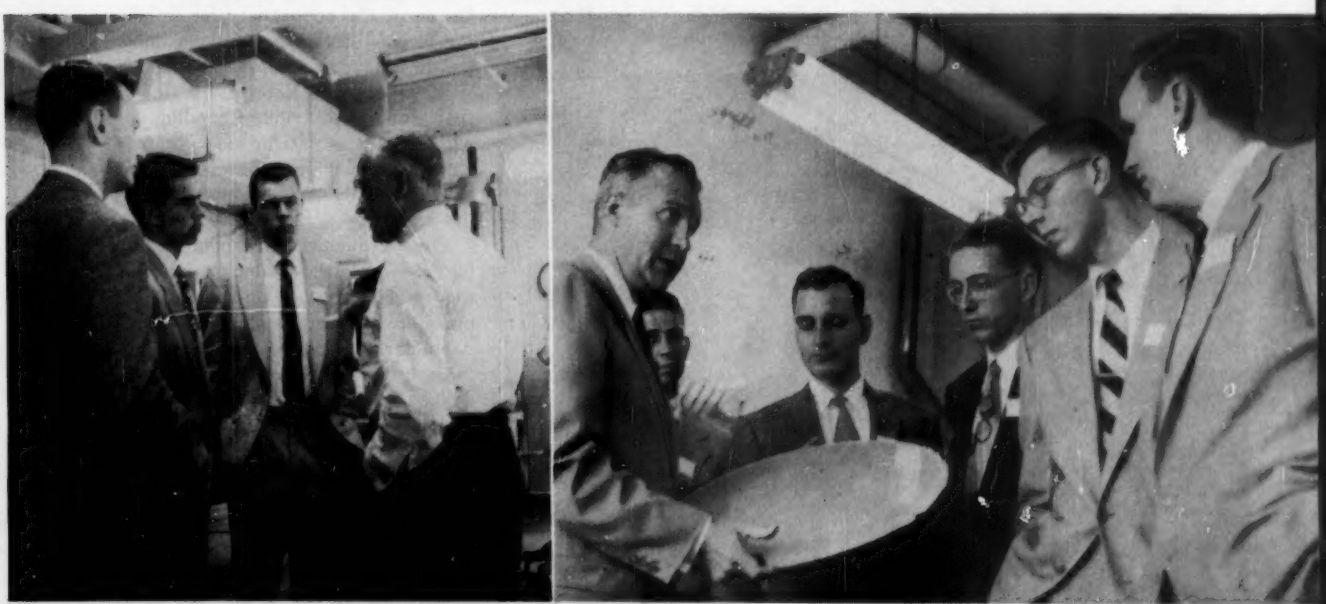
being reached. And that's just what the Summer Institute is calculated to help correct.

How? When the college juniors attending this summer's session return to campus in September, they'll act as goodwill ambassadors for the company. They'll talk Kellogg to other undergraduate technicians, maybe even write articles in campus journals about how they spent the summer. As a result, Kellogg should find it that much easier next year to recruit new men. More important: it will facilitate getting interviews with a larger number of job candidates next year—one of the company's roughest recruitment problems.

"Lining up interviews is a tough job in itself these days," Coyne points out. "It's getting increasingly difficult to see men on campus because of the rugged competition you meet from other companies."

Odds Rough: One college placement director, for example, figures that 750 firms will visit his campus this year seeking manpower. Three times that number will probably contact him by mail. Another director claims that 800 companies will approach him to recommend technically trained candidates.

Facing those staggering odds, what kind of response is Kellogg getting now for institute members? This year



. . . soak up experience from department heads, meet and talk with division managers of every type.

over 200 undergraduates applied for admission to the company's summer program. That number was finally narrowed down to 25 of the most likely prospects. Of these, 19 accepted company bids.

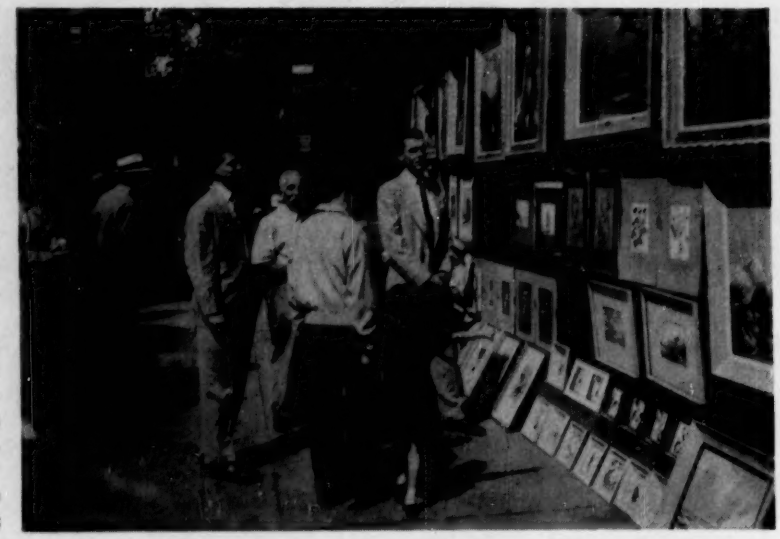
What's in Store: For these 19, here's what lies in store in the coming weeks. First they'll get a full-time job in one of Kellogg's many design departments (heat transfer, instrumentation, equipment, or piping, for example). Working on hot engineering problems, novices will be granted an opportunity to "live" Kellogg at close quarters. Tackling problems with veteran personnel will "rub in experience." What's more: department supervisors are expected to give additional coaching.

Then, once-a-week lectures by top management will brief institute juniors on over-all Kellogg organization, department workings, even latest equipment designs and techniques. Supplementing lectures, films on company-engineered projects abroad will add information and plenty of color.

In addition, juniors will be treated to a visit to Kellogg's big Jersey City unit, will do some pilot-plant inspecting in Kellogg research laboratories. Winding up this phase of the program, visits to nearby Kellogg-designed plants are scheduled.

Repeat Performance: One feature of the institute that has proved popular with former institute trainees is due to be repeated this year. That's the informal get-together with Kellogg President Warren Smith and other top-ranking company brass. Essentially, this meeting provides a fill-in on company history, financing, and future potential—but its value from a public relations angle is equally, if not more, important.

Finally, toward the end of summer, another neat refinement will be added. Because junior members working in one division can't get much opportunity to view the intimate workings of other departments, all trainees will be asked to submit brief reports on over-all company organization. For each of them this report sums up the institute in one easily remembered picture.



OFF-TIME BEATS: For institute attendees, New York's a playground.

As far as Kellogg is concerned, that's the cake and the icing, too. But from the student's viewpoint there's lots more to be gained.

Spell of New York: Because most of the undergraduate engineers come from out-of-town schools (MIT, Purdue, Michigan, Yale, Cornell, Colorado U., etc.), the opportunity for frolicking in New York after working hours is a pleasant anticipation.

In past years, Kellogg has found that its students prefer banding together in twos and threes—some rent apartments in town, others stay at local fraternity chapters or patronize the YMCAs.

From a summer thus spent in "the big city," most can decide whether they prefer urban or rural living—can make the all-important first-job decision so much the easier.

Cost, Reasonable: What does a full-fledged summer institute like Kellogg's cost a company? Roughly about $300-350/lecture. Two lectures a week for 7½ weeks tallies $4,500-5,250 for that phase of the program alone. Total institute tab: somewhere around $22,000 (including salaries). Does it pay off in the long run? Answer: Kellogg's already making plans for next summer's session.

HEADQUARTERS: No curfew, but sometimes back 'home' for mail, relaxation.

6 MONTHS IN STORAGE
. . . NO PEROXIDE BUILD-UP!

TWO different lots of Swift's DP Stearic Acid were put under storage conditions for six months. Here is how each lot tested at the end of that time:

	LOT 1576 SWIFT'S	LOT 1633 SWIFT'S
Peroxide Value (Original)	NIL	NIL
Peroxide Value (6 Months Later)	NIL	NIL

SWIFT'S STEARIC ACID
for lasting product freshness

Peroxide value is a measure of oxidation. Where stearic acid is involved, oxidation is an enemy to the shelf life of your product. The results of the test shown above were important to us for two reasons and should be of equal interest to *you* for the same reasons:

(1) *Swift's Double Pressed Stearic Acid resists oxidation* over extended storage. It is shipped fresh to *stay* fresh and to help insure the stability of your product.

(2) Results of a ten week accelerated storage test carried out under identical conditions using fresh samples of DP stearic acid produced by five manufacturers showed the Swift's product to have the *lightest color and greatest storage stability of all samples tested.*

"Application" purity is no accident with Swift's Stearic Acids. Only the better suited grades of raw materials are selected from the wide variety available to us for processing in a unique low temperature solvent process. With it, impurities and color bodies are selectively extracted. Low ash, light color, bland odor, and true product freshness and stability are the result.

Write for details today—and remember . . .
ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS

Swift
1855 CENTENNIAL 1955
TO SERVE YOUR INDUSTRY BETTER

USE THIS COUPON FOR FURTHER INFORMATION

Swift & Company, Industrial Oil Dept. O-18
1840 165th Street
Hammond, Indiana

Please send further information on Swift's Stearic Acid for use in:

_____

_____ ☐ Send Industrial Oil Bulletin.

Name _____ *Title* _____

Company _____

Address _____

City _____ *Zone* ___ *State* _____

ICWU'S DR. ABRAMS: In chemical plants, 'enlightened management' . . .

Won't Wait for Disaster

How do chemical firms rate on health programs?

More education and research needed, says union's M.D.

Tell your employees about the materials they're using, and help support research in industrial hygiene.

That's what chemical management can do to combat occupational disease, according to a Chicago physician and industrial health specialist who serves as medical consultant to International Chemical Workers Union (AFL).

Interviewed by *CW* last week in his office near Chicago's Loop, Dr. Herbert Abrams credited chemical management with having helped to bring about many advances in the field of industrial health in recent years. But he warns that as the industry moves ahead with improved products and processes, "new health hazards are being created constantly while we have not yet adequately controlled such old hazards as silicosis and lead poisoning."

Management Credited: Abrams—formerly an officer in the U.S. Public Health Service and later chief, Bureau of Adult Health, California State Dept. of Public Health—has written on industrial health topics since 1950 in publications of the American Public Health Assn. and the American Medical Assn.

"Management contributions to industrial health progress are potentially great," Abrams told *CW*. "Enlightened management does not wait for an adverse experience in terms of accidents, diseases or workmen's compensation before making needed improvements. A recent notable contribution by management was that of the chromate producing industry in its cooperation with governmental agencies in the investigation and control of lung cancer resulting from inhalation of certain chromium chemicals."

Abrams offers these five suggestions to management on improving health conditions in chemical plants:

- "Educate the workers. British industry seems to be doing a better job in this respect than U.S. industry; an example is the 'Safety Handbook' issued to employees by Imperial Chemical Industries Ltd.
- "Test all new chemicals for toxicity before permitting their use.
- "Permit employees to participate in the control of health hazards by

IN CHICAGO OFFICE, Abrams (left) consults technician on test for lead in blood, (right) checks blood pressure.

If you **MUST** stop Corrosion

KEL-F® PLASTIC WILL

KEL-F Plastic Molded and Fabricated Valve Linings, Valve Diaphragms, Gaskets, Ring Seals, Gauge Crystals, KEL-F Dispersion Coated or Laminated Lined Tanks, Vessels, Reactors, Piping and Tubing can protect your plant equipment against chemical corrosion

KEL-F Fluorocarbon Plastic is the best non-permeable, corrosion-proof material available today. It is inert to virtually any type of chemical attack—including mineral acids, oxidizing agents as well as strong caustics. When nothing else will protect equipment, KEL-F Plastic usually will.

HERE ARE SOME OF ITS OUTSTANDING CHARACTERISTICS:

Temperature Tolerance

Exhibits satisfactory properties over a temperature range of approximately 710°F. (−320°F. to 390°F.)

High Compressive Strength

Pressures of 8,000 psi result in only 4% to 5% permanent set. Line seals are retained longer when gaskets and O-ring seals are made of KEL-F Plastics.

Non-Adhesive

KEL-F Plastic is non-wetting even after long periods of immersion. Surface is anti-fouling when in contact with even the most viscous liquids.

KEL-F Plastic is a thermoplastic and easy to fabricate. It is readily molded by extrusion, transfer and injection. Available in sheets, rods, tubing and film, it can be fabricated, heat formed, machined and heat-sealed by a growing list of experienced fabricators.

New! KEL-F Plastic Dispersions

KEL-F Plastic Dispersions have been developed for bake-coating of metallic surfaces that must be corrosion resistant, anti-adhesive and electrically non-conductive. These Dispersions can be applied by spraying, spreading or dipping.

The full story of what KEL-F will do for you is worth having. Write or call for additional information.

KELLOGG

THE M. W. KELLOGG COMPANY

Chemical Manufacturing Division,
P. O. Box 469, Jersey City, N. J.

SUBSIDIARY OF PULLMAN INCORPORATED

®Registered trademark of The M. W. Kellogg Company's fluorocarbon polymers.

EVERY DAY

QO®

FURFURAL

PROVES ITS VALUE

Petroleum refiners, resin makers, chemical producers and abrasive wheel manufacturers are among those who rely on QO furfural for performance, uniform purity, low cost, and unfailing availability.

Over 40 petroleum refineries in many parts of the world use this highly selective solvent for refining lube oil and other petroleum fractions.

Resin manufacturers enjoy the benefits of long flow properties in modifying phenolic resins.

Chemical manufacturers find it an economical raw material for making pharmaceuticals, lysine and nylon intermediates.

Abrasive wheel manufacturers use its solvent and wetting action in softening phenolic resin binder, and then react it with the resin to form hard dense wheels.

What others have accomplished with QO furfural can be equaled or surpassed. Post yourself; write for a copy of Bulletin 204 which describes the uses of QO furfural.

The Quaker Oats Company
CHEMICALS DEPARTMENT

334F The Merchandise Mart
Chicago 54, Illinois
Room 534F, 120 Wall St.,
New York 5, N. Y.
Room 434F, P. O. Box 4376
Portland 8, Oregon
In the United Kingdom: Imperial Chemical Industries, Ltd., Billingham, England
In Europe: Quaker Oats-Graanproducten N. V. Rotterdam, The Netherlands
A/S "Ota", Copenhagen, S. Denmark
Quaker Oats (France) S.A., 3, Rue Pillet-Will Paris IX, France
In Australia: Swift & Company, Pty. Ltd., Sydney
In Japan: F. Kanematsu & Company, Ltd., Tokyo

means of joint labor-management health and safety committees.

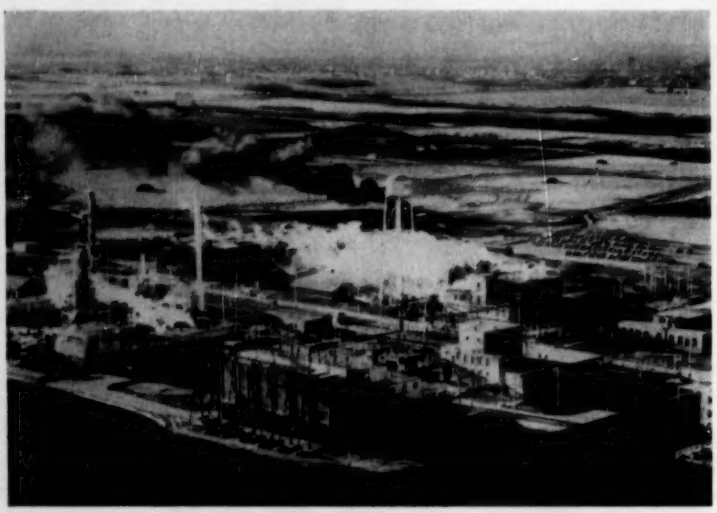
- "Support scientific research in industrial health problems.
- "Help to make more effective the administration of existing laws on industrial health."

Reporting Is 'Spotty': In-plant medical and industrial hygiene programs vary widely among different companies, Abrams noted. "Generally the larger plants have more adequate services, but by no means can we say that in those plants no further improvement is needed—many of them still do not provide the proper medical and environmental health protection that they should." He said that most chemical workers—as in the case with employees in other industries—have inadequate medical care coverage under their present insurance plans, because most of those plans limit coverage to care in hospitals. "Thus these people get no preventive medicine, no care in the home or the doctor's office."

Abrams said industrial health progress is being hindered by a lack of data on current cases. Reporting of occupational diseases is not being carried on for the nation as a whole, and state reporting is "extremely spotty."

"Unions are increasingly turning their attention to health," Abrams said. "I know personally of two recent instances in which vigorous union action greatly accelerated the adoption of protective measures." But he deplores the need for such tactics, favors "an orderly and scientific approach" by all parties concerned.

"A good program of medical care and health protection," he declares, "benefits management just as much as it does the worker." Among the benefits to management: stabilization of the work force, employee goodwill and reduction of time lost from work.



No Polyethylene End in Sight

POLYETHYLENE is the fastest-growing plastic in Canada today—with total consumption estimated at 13.4 million lbs. this year.

So far, however, Canadian Industries (1954) Ltd. is the only domestic producer, operating on natural gas at Edmonton, Alberta (*see cut*). Plant capacity is 25 million lbs./year—considerably above Canada's requirement at the moment. But so sure are producers that the market will continue to boom that Carbide Chemicals Div., Union Carbide of Canada, has indicated it will break ground soon for a new low-pressure polyethylene plant at Montreal East.

THE PERKIN-ELMER

INSTRUMENT DIGEST

A condensation of some articles in the Spring issue of THE PERKIN-ELMER *INSTRUMENT NEWS*, a publication of The Perkin-Elmer Corporation, manufacturers of scientific instruments—Infrared Spectrometers, Tiselius Electrophoresis Apparatus, Monochromators, Flame Photometers, Continuous Infrared Analyzers, Vernistats, Amplifiers, Astronomical Equipment, Thermocouples, Lenses, Crystal Optics, Special Designs for the Government. **For further information, write The Perkin-Elmer Corp., Norwalk, Conn.** Offices in: New Orleans, Chicago, Washington, D. C., and Zurich.

Norwalk, Conn. July, 1955 Vol. 6, No. 3

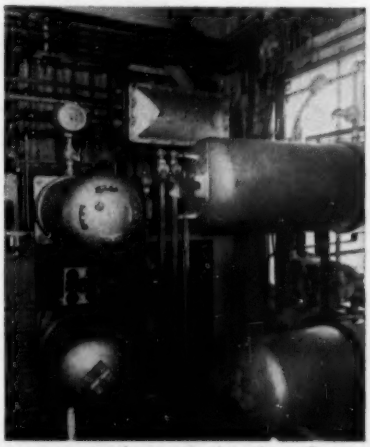
FLEXIBILITY, LOWER PRICES MARK TRI-NON® ADVANCES

TRI-NON Analyzers, which have proved themselves in on-stream tests (see cut), are now available in four different series. Each series is designed to handle processing problems of varying complexity and each series differs in price. The net result to the user is an analyzer custom-tailored to his processing requirements at the most economical cost.

Series A is the de luxe series with maximum performance in all respects: high in sensitivity, stability and discrimination. It operates under extreme ambient conditions and is explosion-proof. Response time can be easily tailored to any analytical problem since the balancing time of the analyzer is completely independent of the recorder or controller. Series A is priced at $5450 and up.

Series B consists of an explosion-proof pickup section with non-explosion-proof electronics and recorder which may be remotely located up to a maximum of 500 feet. Performance is the equivalent of a Series A instrument where interference is not great. Price varies from $3500 to $4500.

Series C is non-explosion-proofed. As in Series B the pick-up section may be remotely located from the electronics. Performance is the same as Series B. These models are highly stable and completely adequate for many process streams. Series C is priced at $3000 to $3500.



TRI-NON *Analyzers at American Cyanamid's new Fortier plant monitor ammonia and acetylene streams.*

Series D is also non-explosion-proofed. All components are mounted in a cabinet with pickup mechanically coupled to the recorder. Performance is the same as Series C. This series is especially useful in monitoring for toxic or explosive vapors in the atmosphere. Prices range from $2800 to $3000.

A new brochure describing prices, performance and specifications of these instruments is available on request from Perkin-Elmer.

New Stereoscopic Camera for Extreme Close-Ups

A new 35 mm stereoscopic camera for photographing objects at very close range in either black and white or color will soon be available from Perkin-Elmer. Three-dimensional photographs of heretofore unequalled accuracy may be taken by either the amateur or professional without the common distortions inherent in ordinary cameras.

The most important feature of the new camera is the use of two prisms which independently vary inter-lens separation and parallax adjustment. The two prisms are mounted, one in front of each of the matched lenses, in such a manner that the distance between both upper and lower reflecting surfaces of the prisms may be varied. Varying these distances, allows one to determine the depth effect and to correct for parallax by translation rather than by convergence. Photographs taken with the new camera do not have the usual wedge-shaped distortion found in most close-up three-dimensional shots.

The camera was developed by Dr. David Donaldson of Harvard Medical School. It is particularly suited for medical and biological research.

Spectrometers Get Bigger and Better

Infrared de luxe. This Model 13 Ratio-Recording Spectrophotometer is one of the most elaborate infrared instruments ever shipped by Perkin-Elmer. It is an outstanding example of the Building Block principle for it incorporates a microscope attachment, double pass monochromator, interchangeable prisms, and a variety of infrared detectors for macro and micro work. This instrument is shown at the General Electric Company's Research Laboratories where it is used as an all-purpose instrument for advanced research problems. Several other Model 13s—with ultraviolet attachments—have been shipped to other large research centers.

The Perkin-Elmer Corporation
820 Main Ave., Norwalk, Conn.

SEND ME my complete copy of 8-page INSTRUMENT NEWS. Put my name on your mailing list to receive this quarterly publication without charge.

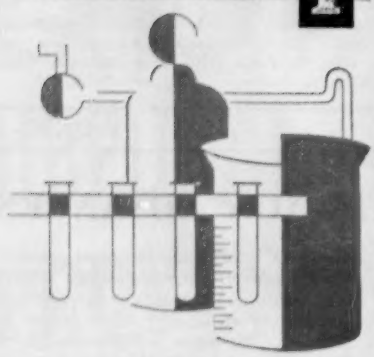
NAME

COMPANY

TITLE

ADDRESS

Over a half century...
SERVING INDUSTRY THROUGH CHEMISTRY



NATURAL
GUMS

A full line—one for every use

GUM ARABIC—Many uses: in textiles, confectionery, pharmaceuticals, lithography, matches, adhesives. Foam stabilizer in brewing. Available in whole, granular and powder form or in purified syrup form. Standard in viscosity and solid content.

IRISH MOSS—Used where highly soluble viscous mucilage is desired, such as cold water paint, shoe polish, leather and textile sizing. In natural, bleached or purified powder forms.

GUM KARAYA—A thickener in printing, finishing and sizing. Other uses: in pharmaceuticals as an emulsifier; in ceramic clays, candy and ice cream as a binder. Available in natural or powder form.

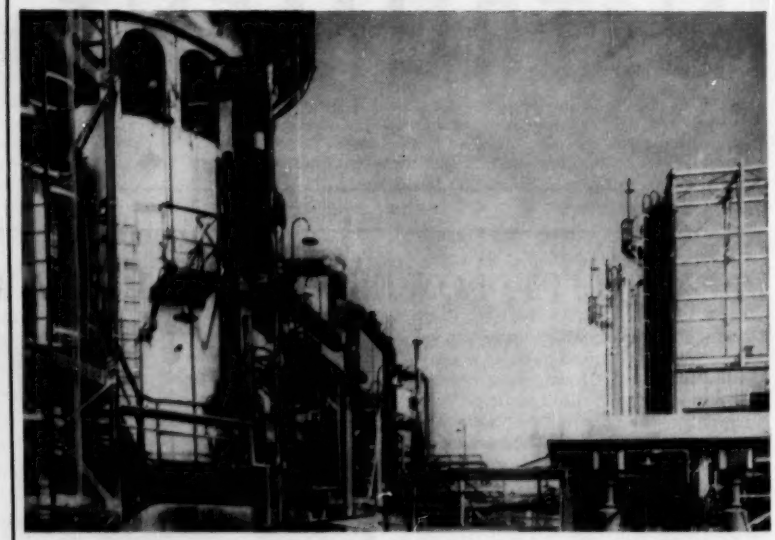
LOCUST BEAN GUM—A thickening agent for: textile printing and finishing, for food and pharmaceutical products, toilet preparations and cosmetics. Swells in cold water to give an extremely viscous solution. Also known, in a prepared solution, as Luposol (digested and filtered with all specks, flakes and other foreign matter removed).

GUM TRAGACANTH—Used in foodstuffs, textiles, pharmaceuticals, cosmetics, dentifrices, etc., wherever a thickening agent is necessary. All physical forms available: cracked, clean powder and filtered solutions.

We are direct importers of natural gums and always have large stocks on hand. Please write for SPECIAL BULLETINS —no obligation, of course.

JACQUES WOLF & CO.
Chemicals PASSAIC, N.J.

Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.



CUANLITITLAN UNITS: Turning out fertilizer at near-capacity rates.

FOREIGN. . . . . .

Exports/Mexico: The day when Mexico becomes a major exporter of chemicals is looming closer this week. Not only are Mexican fertilizer plants operating at near-capacity levels, but before the end of 1955, Petroleous Mexicanos will have its $8.5-million absorption plant at Reynosa—capable of turning out 300 cu. ft./day of natural gas—in operation.

Permex expects to recover 8-10 million bbls. of natural gas, butane, propane, kerosene, and diesel oil daily from Reynosa alone; some private observers anticipate that this absorption plant will bring just one step nearer the export of natural gas to the U.S.

•

Fertilizer/India: Ten million cu. ft. of coal gas that belch daily from the coke ovens at Sindri, India, will soon be turned into 400 tons/day of ammonium nitrate.

The new nitrate-producing units will be built by Montecatini, Ltd., will cost over $14 million, will raise Sindri's output some 60%.

•

Expansion/Italy: In the face of rapidly increasing economic expansion and falling unemployment, Italian governmental officials this week are bucking for further foreign investment. Minister Vanoni has recently introduced a bill into the Senate, which, if passed, would offer foreign capital the incentive of "no limit on transfer of proceeds abroad"—whether interest, profits, or realization of subsequent sale.

Also sure to lure foreign capital, if passed: new regulations for the issue of bonds and debentures abroad—stating expressly that Italian citizens or firms that get foreign loans will be entitled to obtain the foreign value needed for the interest payment or reimbursement of sums borrowed.

•

Paper/Cuba: The possibility of constructing a paper-from-sugar-cane-bagasse plant in Cuba is currently being studied by the Compagnia Tecnica Cubana S. A.

•

Oil/India: India's Production Ministry has asked one American and two German firms to submit project reports (by October) for the first synthetic oil plant to be built in India. The three firms: Kellogg Co. (New York), and Lurgi and Heinrich Koppers (Essen, Germany).

Earlier this year, a Synthetic Oil Committee recommended setting up a plant with an output of 300,000 tons/year of oil, costing $100 million.

•

Fertilizer/Finland: Rikkihappo-ja Superfosfaattitehtaatoy—one of Finland's largest fertilizer producers—will build a 100,000-tons/year fertilizer plant in connection with its current superphosphate facilities at Kotka. After the new plant is in operation, an old plant at Raippo will be closed.

Man feeds the land

The importance of nitrogen to the soil is well known. Our agricultural chemicals industry is meeting the nation's rapidly expanding need for this essential element through increased production of ammonia. Applied in fertilizers, or directly into the soil, ammonia is doing much to revitalize the tired earth.

Lummus is currently engineering and constructing a number of ammonia plants in widely separated parts of the world. Our experience, which covers over a half century, is broad in chemical plants and petroleum refineries. Perhaps our staff and facilities can complement your own on *your* next project.

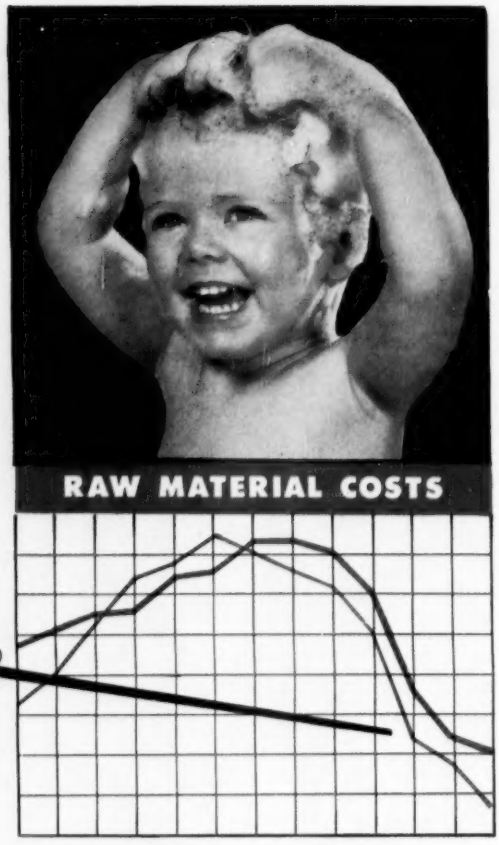
THE LUMMUS COMPANY, 385 Madison Avenue, New York 17, New York. *Engineering and Sales Offices:* New York, Houston, Montreal, London, Paris, The Hague, Bombay. *Sales Offices:* Chicago, Caracas. *Heat Exchanger Plant:* Honesdale, Pa. *Fabricated Piping Plant:* East Chicago, Ind.

LUMMUS

DESIGNING ENGINEERS AND CONSTRUCTORS FOR THE PETROLEUM AND CHEMICAL INDUSTRIES

HE CUTS YOUR COSTS...

when he's put to work in your shampoo



The ULTRAWETS *wet, penetrate, clean, emulsify.*

Have you met the ULTRAWETS, the alkyl aryl sulfonates that have saving ways with good shampoos?

Here's why you'll want to know them better . . .

ULTRAWETS in your shampoo formulation may help you to improve your present product. On top of that, these superior alkyl aryl sulfonates are far less costly than many other types of detergents and will lower your costs.

Add the inevitable consumer acceptance of these new shampoos, and you have a combination of advantages well worth going after. Let us help you. Our sales engineers will be glad to work with you to develop the ULTRAWET-base shampoo formulation to meet your performance requirements. Just send the coupon or write one of the offices listed.

THE ATLANTIC REFINING COMPANY
Dept. H-7, Chemical Products Sales
260 South Broad Street. Philadelphia 1, Pa.

Please send information on use of ULTRAWET in shampoo.

Name _____

Position _____

Company _____

Address _____

ATLANTIC
PETROLEUM
CHEMICALS

Philadelphia, Providence, Charlotte, Chicago

In the West: L. H. Butcher Co.

In Canada: Naugatuck Chemicals Division of Dominion Rubber Company, Ltd.

In Europe: Atlantic Chemicals SAB, Antwerp, Belgium

WIDE WORLD

DOWNTOWN PHILADELPHIA: For certain chemical plants, a crisis over . . .

City 'Shutdown' Orders

After years of laxity, Philadelphia is enforcing its fire and zoning rules with a vengeance—and chemical companies are bearing the brunt of the crackdown.

So far, several dozen smaller companies have been told to shut down, renovate, or move; and it's expected that lawsuits may be filed to get the city to pay part of the costs.

Sparks will be flying in Philadelphia court rooms this fall—so city officials are predicting this week—as certain chemical companies seek to keep the city from enforcing its abrupt "eviction" orders.

The sudden crackdown came last fortnight in the wake of public reaction to last October's fire and explosion at Berg Laboratories, in which 10 Philadelphia firemen lost their lives. The city hired a chemical engineer—John Tunnell, whose industry experience includes service with Du Pont and Allied Chemical's Barrett Division—and now has launched a drive to enforce the spirit and letter of its 1952 fire code.

Following recent inspections, seven chemical firms in various densely populated parts of Philadelphia have received orders to relocate, on the ground that their operations are too hazardous. Among 550 chemical process concerns in the city, 15 have been partly or completely shut down; and it's understood that another 15 plants are being scrutinized for possibly similar action.

Moving Costs High: Most of the seven plants that have received "shutdown" orders are fairly small, but still it's estimated that—for some of them, at least—cost of relocating would run into hundreds of thousands of dollars. As small companies, they're expected to find it worthwhile to fight these orders in court and possibly try to force the city to pay part of the moving expenses.

The city government says it has no intention of underwriting the moving costs, but has offered to help find new locations for the companies. And the city has promised to be reasonable about giving the concerns time to relocate.

Unlikely Alternative: Actually, there's an alternative for at least some of the companies involved—but probably none will choose it. That's to modernize their equipment and renovate their plants to meet the city's safety requirements. But officials say the costs would be prohibitive.

Commissioner Walter Pytko says his inspectors are continuing the check of every chemical plant within the city limits. This, of course, includes a number of large and medium-size works; but most of the trouble has been with small concerns. It appears that this is because these companies have been operating on budgets that made no provision for hiring experienced chemists and chemical engineers.

Officials of the department aren't inclined to be too sympathetic toward the companies that have been told to move. "In most cases," one staff member asserted, "they knew what they were doing. They just didn't want to shell out the money to make their plants meet requirements." He commented that they should have made a point of complying with regulations before buying any expensive equipment or property.

Political Climate Changed: One factor in the situation: the "reform" administration that has moved into City Hall after turning out a political faction that had controlled the city government for nearly 70 years. The new administration charges that inspection procedures were long inadequate, and that "political pull" had much to do with the fact that some companies had been violating the regulations with impunity.

Some of the companies ordered to leave and others now under investigation never had their sites zoned under the old zoning ordinance; and some were never licensed for manufacturing operations. Either management didn't know what the requirements were, or else the inspection system was defective. For decades, in certain instances, inspectors overlooked the plants.

In some cases, Pytko said, operators were unaware that the materials they were using were explosive or highly inflammable. He cited the case of "a multimillion-dollar mid-city manufacturer" who recently applied for permission to build a new wing in which to produce a new chemical. The application was turned down, Pytko said, when investigation showed that "potentially explosive" processes would be required.

If the city proves unrelenting in its current crusade, there may be a gradual drop in the amount of chemical production in Philadelphia. And if managements contest the shutdown orders in court, important precedents may be set on what a municipality can require of chemical process companies, and whether the city should shoulder part of the moving costs.

"A plasticizer for every purpose"

For a plasticizer with low, low temperature flexibility (-70°F.) that is also very permanent

USE

ADIPOL® ODY

PLASTICIZER

You will find Adipol ODY an excellent primary plasticizer for most resins. It imparts permanent flexibility and a low temperature flexibility of —70°F. (Commercial Standard 192-53, Impact Test)* to finished products. Other properties to be obtained by your using Adipol ODY are low water extraction, heat stability, good U-V light stability and good hand.

EXTRUSIONS: In such items as vinyl garden hose Adipol ODY has found wide acceptance for its excellent properties.

PLASTISOLS: Adipol ODY produces plastisols with low initial viscosity, excellent shelf life, low temperature flexibility, high resilience, good heat and light stability, and imparts pseudoplastic flow properties.

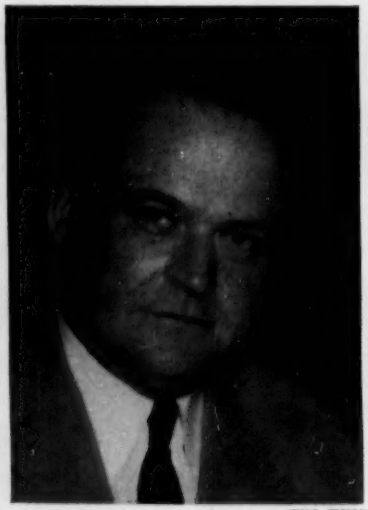
Technical data and samples will be sent immediately upon request without obligation.

CUT OUT AND SEND TODAY

OHIO-APEX DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
NITRO, WEST VIRGINIA
DEPT. 46

☐ Send me technical literature.
☐ Send me sample of ADIPOL ODY.

NAME .....
COMPANY .....
ADDRESS .....
CITY ..... STATE .....



WIDE WORLD

COAL MAN MOODY: To management, advice to strive for strength.

WIDE WORLD

SECRETARY MITCHELL: To state officials, tips on new laws for GAW.

LABOR . . . . . .

Push for Parity: If it's proper for the U.S. to seek to bargain from a position of strength in international affairs, it should be equally good strategy for management to strive for strength in labor bargaining. So says Joseph Moody, president of the Southern Coal Producers Assn., whose thesis is that management "must prepare both in money and in manpower to balance the economic and the political power of international labor unions."

Moody holds that in each major industry, management should "establish a carefully planned policy on labor relations and act as an industry on basic policy."

•

No Rush to Revise: By early next month, Secretary of Labor James Mitchell will offer recommendations on how various state laws can be amended to permit employees to get full unemployment benefits while drawing "layoff pay" under a modified guaranteed wage plan such as those agreed on in the auto industry last month. Mitchell won't say whether he approves of those plans, merely says he's glad that the companies and unions worked out the settlements without strikes and without governmental intervention.

But as of this week, it appears that very few state legislatures will act on the matter this year, and that only about 17 legislatures will be able to take up the problem next year—unless special sessions are called in other states. At present, it seems that workers receiving layoff pay from their employers would lose all state unemployment benefits in at least five states and would get only partial benefits in at least 20 others.

•

Proud of Pension Plan: In new chemical labor contracts, there's no clear-cut wage pattern this week, with some liberal across-the-board increases (such as the 8¢/hour rise for 900 employees of Westvaco's chlor-alkali plant at South Charleston, W. Va.); some increases for certain groups (such as the various wage adjustments for about one-sixth of the 170 employees at Jefferson Chemical at Port Neches, Tex.); and some moderate increases (such as the 2% pay hike at Ansco's Binghamton plant).

But one development that's getting attention from labor and management people in chemical processing and related fields this week is the new five-year pension and insurance agreement between B. F. Goodrich and the United Rubber Workers (CIO). Goodrich is ditching its 21-year-old employee-contributory pension-insurance plan in favor of a program that will be completely paid for by the company. URW Vice-President Joseph Childs—who headed the union's bargaining team—calls the plan "the very best that the union has secured"; meaning that this will now become a goal for other unions.

HERE'S YOUR Check List OF USS CHEMICALS

United States Steel offers prompt and efficient service on all chemicals

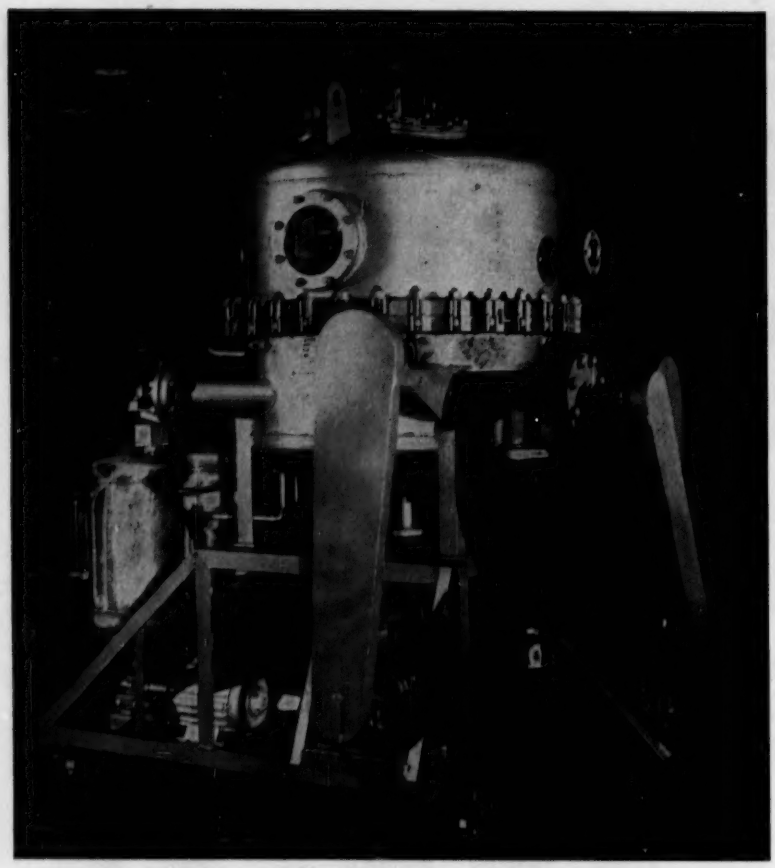
United States Steel has ten plants producing chemicals. When you order your chemicals from U.S. Steel, you are assured of service and shipment to meet your production needs. For more information, contact our nearest Chemical Sales Office, or the United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

A NEW COLOR MOTION PICTURE, "The Waiting Harvest," tells an interesting story of U.S. Steel's participation in the field of chemicals. It is available on request in 16 or 35 mm film from Film Distribution Center, United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

SEE THE UNITED STATES STEEL HOUR. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

USS Chemicals

UNITED STATES STEEL



Complete Continuous Pressure Filter Station

Liquid-solids separation through a pressure-vacuum differential has many applications in chemical processing.

Eimco designed, tested and approved pressure vessels of this type have found wide acceptance in many different kinds of jobs. Some of these use heat and others use inert gas. Some of the jobs involved combustible materials and others non-combustibles.

All of the installations are classified as far as Eimco is concerned to protect the customer's process or his idea and his flow sheet.

Eimco was selected in each case because Eimco's experience in the field of filtration is unsurpassed and Eimco's ability to engineer into each filter that extra quality that provides for greater product recovery and greater profits for the user.

Let Eimco's Research and Development Center tackle your filtration problem. You will have the benefit of work by some of the best technologists in the industry, plus complete pilot plant data. Eimco backs the recommendations of its Research Center by a guaranteed performance.

THE EIMCO CORPORATION

Salt Lake City, Utah—U.S.A.

New York, N. Y. Chicago, Ill. San Francisco, Calif. El Paso, Texas Birmingham, Ala.
Duluth, Minn. Kellogg, Ida. Baltimore, Md. Pittsburgh, Pa. Pasadena, Calif. Houston, Texas
London, England Gateshead, England Paris, France Milan, Italy Johannesburg, South Africa

B-108

You Can't Beat An Eimco!

WIDE WORLD

GOVERNOR WETHERBY: For process plants, a question of water rights.

LEGAL. . . . . .

Water Bills Loom: State governments—nearly all of which are perennially looking for more revenue to meet rising budgets—may soon be seeking to collect monthly payments from process companies whose plants take water directly out of intrastate lakes and streams. Pointing up this possibility is Kentucky's youthful Governor Lawrence Wetherby, who has been keeping an eye on a New York lawsuit involving state water charges. "If New York proves it has the right to charge for its river waters, Kentucky would also have that right," he reasons.

•

Second Vaccine Suit: A second civil suit based on alleged failure of polio vaccine manufactured by Cutter Laboratories is pending this week. While the plaintiff in the first such suit (*CW, June 18, p. 19*) is asking $100,000 plus special damages and medical expenses, grocer Edward Kadlubek is asking a round $400,000 in his suit filed last fortnight in circuit court at Chicago. His complaint asserts that his 18-month-old son came down with paralytic polio after inoculation.

•

Plant Closing Asked: Seven residents of Columbia, S. C., are asking a state court there to (a) order Columbia Organic Chemicals to shut down its plant and (b) award them $100,000 damages against that company. Their suit alleges that odors from the plant, together with an "unsightly" plant yard

Make friends with Continental's steel containers

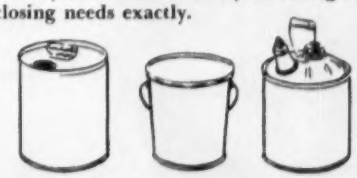
IN SOLID COLORS OR YOUR OWN LITHOGRAPHED DESIGN

Air-tight lug cover STEEL PAILS

From air-tight lug covers to double-seamed bottoms, Continental steel pails comply strictly with all shipping regulations. Along with rugged protection, Continental containers give your product added sales appeal as well. Attractively lithographed with your name or trade mark, each container not only helps sell itself, but helps sell *all* your products as an integrated package "family". What's more, these re-usable pails will deliver your sales message long after the original contents have been emptied. Let Continental lug cover pails work for you. Call soon.

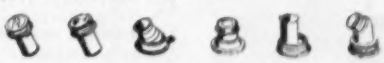
Why not fill all your steel container needs in one order? Continental makes a complete line of "Tripletite" paint cans, "F" style and conventional cans. We'll load in one freight car to save you money on warehouse space, shipping and inventory.

Call on Continental for flaring pails, closed head drums and utility containers. Sizes and styles available to fit your filling and closing needs exactly.



LEAK-PROOF AND SALESWORTHY

Sturdy lug cover steel shipping containers available in 2- through 12-U.S. gallon capacity in various gauges. Welded side seams and compound-lined covers meet ICC specifications. Lugs punctured for shipping tags. Heavy gauge wire bail handles. Side drop handles furnished on 7- through 12-gallon pails. Rugged body styles either straight or with one or two swedges. Cover can be fitted with pouring spouts to meet every need.



Also the tops in pouring spouts and closures

CONTINENTAL CAN COMPANY

Our Fiftieth Year of Tailor Made Packaging

TAILOR-MADE PACKAGE SERVICE

Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4

HERE'S THE BUILT-IN QUALITY YOU GET IN THIS "Buffalo" FAN

In October of 1953, when we introduced the "Buffalo" Type BL Limit-Load Ventilating Fan, we knew it offered the finest features for quiet, stable, efficient performance in industrial service. Since that time, it has more than measured up to highest expectations.

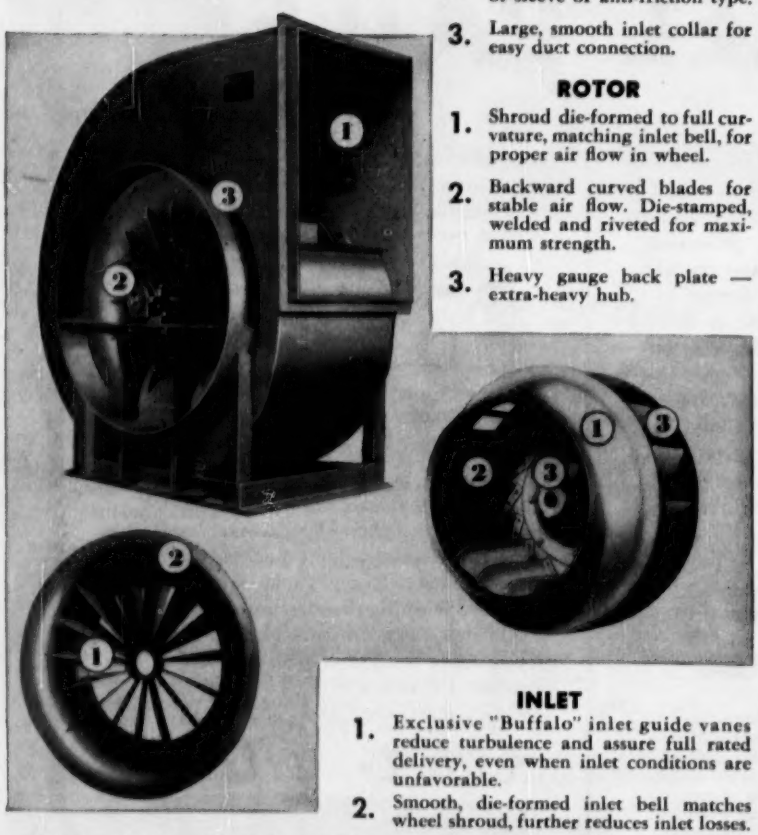
A study of the "Q" Factor* features illustrated here will show you *why* this fan will give you your money's worth, and more, in *performance*. Further details in Bulletin F-102, your copy upon request.

ENTIRE FAN

1. Housing proportioned and streamlined for peak efficiency.
2. Self-aligning bearings; choice of sleeve or anti-friction type.
3. Large, smooth inlet collar for easy duct connection.

ROTOR

1. Shroud die-formed to full curvature, matching inlet bell, for proper air flow in wheel.
2. Backward curved blades for stable air flow. Die-stamped, welded and riveted for maximum strength.
3. Heavy gauge back plate — extra-heavy hub.



INLET

1. Exclusive "Buffalo" inlet guide vanes reduce turbulence and assure full rated delivery, even when inlet conditions are unfavorable.
2. Smooth, die-formed inlet bell matches wheel shroud, further reduces inlet losses.

**The "Q" Factor — the Built-in Quality which provides trouble-free satisfaction and long life.*

"Buffalo"

BUFFALO FORGE COMPANY

189 MORTIMER STREET BUFFALO, N. Y.

PUBLISHERS OF "FAN ENGINEERING" HANDBOOK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING
FORCED DRAFT COOLING HEATING PRESSURE BLOWING

B & I. . . . . .

and danger of explosion, constitute a nuisance that keeps them from enjoying their homes near the plant.

•

Marathon Extended: The AD-X2 hearing that appeared to be uttering its last gasp more than a month ago (*CW, May 28, p. 26*) has been extended. Jess Ritchie, maker of the controversial battery additive, and the Federal Trade Commission lawyers trekked from Oakland, Calif., to Washington, D. C., for one last day of testimony in favor of the product; and then the FTC announced that it would present a rebuttal in August or later. Thus it now seems that hearing examiner William Pack won't be able to make a decision before autumn.

KEY CHANGES. . .

Robert D. Hill, to vice-president and controller, Freeport Sulphur Co. (New York).

J. Mark Hiebert, to president, Sterling Drug, Inc. (New York).

John B. Harris, to vice-president, W. R. Grace & Co. (New York).

Walter B. Morehouse, to general sales manager, Industrial Division, Nopco Chemical Co. (Harrison, N.J.).

Thomas P. Carney, to vice-president, research, Eli Lilli and Co. (Indianapolis, Ind.).

James W. Foley, to executive vice-president, The Texas Co. (New York).

Louis Head, to board chairman and vice-president, Standard Chemical Co. (Troy, Ala.).

Earl Hemperly, to manager, chlor-alkali sales, Velsicol Corp. (Chicago).

H. R. Dinges, to general sales manager, Spencer Chemical Co. (Kansas City, Mo.).

L. R. Modlin, Jr., to manager, general chemicals sales, B. F. Goodrich Chemical Co. (Cleveland, O.).

S. B. Scott, to sales director, Michigan Alkali Division, Wyandotte Chemicals Corp. (Wyandotte, Mich.).

Carl McFarlin, Sr., to executive vice-president, Merritt-Chapman & Scott Corp. (Louisville, Ky.).

Edwin G. Jacobi, to general sales manager, American Alcolac Corp. (Baltimore, Md.).

IN STEARATES, A SPECK OF DIRT THIS BIG •

. . . could make a lady take a dim view of her makeup

If a lady hasn't perfect *confidence* in her cosmetics, it matters little how nearly perfect they may be. And since Metasap Stearates play an important part in keeping many fine cosmetics uniform under all conditions, we see to it that Metasap Stearates are invariably "the cleanest stearates made."

Metasap Stearates are also used in many things—in foods, in plastics, greases, paints—where even a few tiny specks of foreign matter would be too many for the performance and the reputation of your products.

That is why, at Metasap, we use the most thoroughgoing series of fine screens, magnetic traps, and filters to be found in the industry. (We even filter the air.) Plus rigid quality control and the use of equipment which virtually rules out the chance of impurities to begin with.

For Stearates of supreme uniformity and quality, come to Metasap. Our technical service department will gladly advise and assist you.

Send for our informative FREE book, "Metallic Soaps For Research and Industry"

METASAP CHEMICAL COMPANY

METASAP CHEMICAL COMPANY
HARRISON, NEW JERSEY
Chicago, Ill. • Boston, Mass.
Cedartown, Ga. • Richmond, Calif.
London, Ont., Canada

A NOPCO Subsidiary

the cleanest stearates made

Some industries served by Metasap

PAINT *makers solve pigment suspension problems with Metasap Stearates, producing primers and sanding sealers that have excellent filling qualities.*

LACQUER AND VARNISH *makers use Metasap Stearates to assure efficient flatting, and to obtain better finishes.*

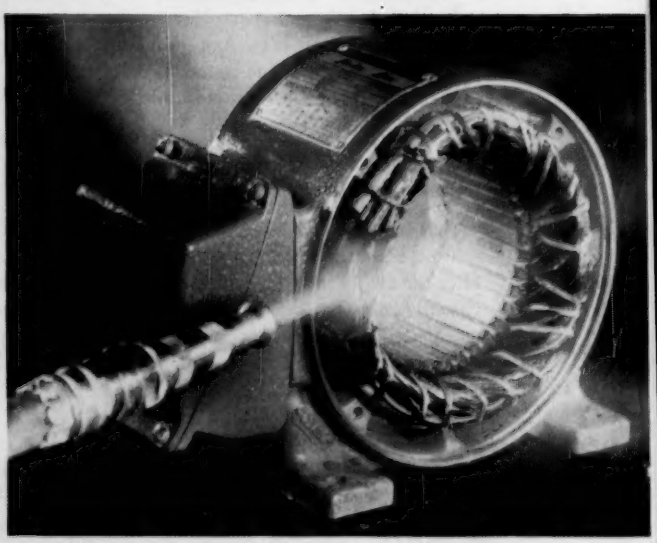
PLASTICS *molders use Metasap Calcium, Zinc, and Barium Stearates to improve internal lubrication, which assures superior preforms, better finished products, and longer mold life.*

RUBBER *processors use Metasap Zinc and Magnesium Stearates to lubricate molds and prevent uncured stock from sticking.*

LUBRICANTS—*Grease makers use Metasap Stearates because these outstanding soaps afford a wide range of quality bases that help producers to meet any grease specifications.*

PAPER, *Textiles, Cosmetics, Food Processing, and many other industries call upon Metasap Stearates to perform important services.*

MOTOR FACTS ON INDUSTRY'S
MOST PREFERRED "POWER PACKAGE."



Electrical System Fact—New exclusive Bondite impregnating varnish, partner to new Bondar and Mylar* insulations, guarantees complete resistance to weather. It doesn't just repel, it resists—all the way through.

*Du Pont Registered Trade-Mark

FACT:

The new Life-Line A is the most weather-resistant motor on the market

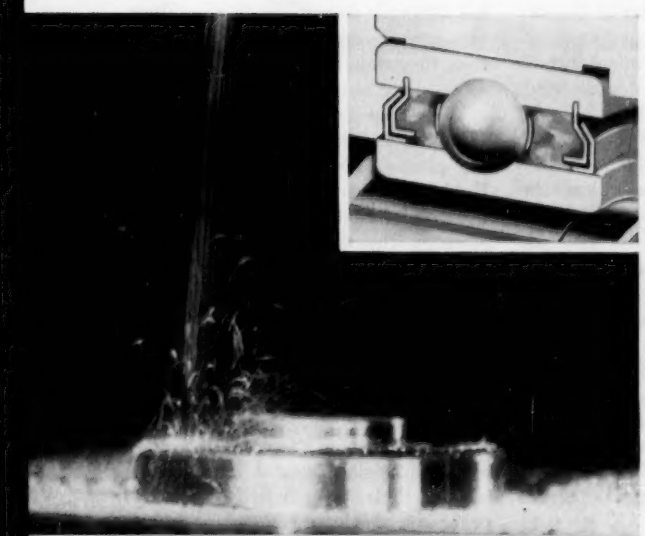
Whether your application is hot—cold—wet or dry, you'll find the new Westinghouse Life-Line® "A" motor will last longer under more extreme weather conditions than any other motor you can buy.

New insulation materials, housing designs, 4-way sealed bearings are tangible evidence of electrical, mechanical and lubrication system improvements that make Life-Line "A" industry's most preferred package of power.

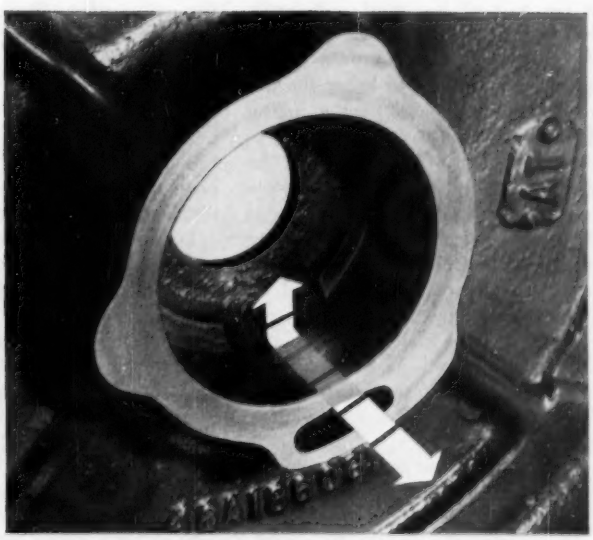
Get all the facts by calling your Westinghouse sales engineer . . .
The Man With The Facts.

J-21882

YOU CAN BE SURE...IF IT'S
Westinghouse



Lubrication System Fact—Two outer seals of new 4-way sealed bearing act as flingers and literally (see photo above) throw off damaging contaminations. Inner seals, attached to outer bearing race, are stationary and form a positive labyrinth with outer seals.



Mechanical System Fact—New exclusive air by-pass on totally-enclosed motor permits the motor to breathe around the bearing—not through it—minimizing atmospheric damage. Finest grained castings used in new cast-iron housings.

How Two Low-Pressure Polyethylenes Compare

Property	ASTM Test Method	Phillips Process Marlex 50	Ziegler Process Koppers' Super Dylans
Density		0.96	0.93—0.95
Softening temp., F		260*	250+
Melt index	D1238-52T	0.6	4.0—0.1
Brittleness temp., F	D746-52T	below − 180	below −100
Flammability, in./min.	D635-44	1.04	0.9—1.1
Tensile strength, psi.	D638-52T	3100+—5100	2800—5500
Impact strength, ft. lbs./in. notch	D256-47T	3.0	1.0—5.0
Hardness, Shore D	D676-49T	65	63—70
Stiffness, psi.	D747-50	140,000	50,000—100,000

* Adapted from method of Karrer, Davis and Dieterich, Ind. and Eng. Chem. (Anal. Ed.) Vol. 2, p. 96 (1930).
Note: Values in last column represent the range covered by members of the Super Dylan family.

More Alike Than Different

For want of information on how they differ, the new Ziegler- and Phillips-process polyethylenes are simply "low pressure" or "crystalline" polyethylenes to the bulk of the plastics industry. But, last week, as the first specimens of the "low pressure" products were appearing, the need to know the difference became more than a matter of academic curiosity.

Since the first (Koppers') of the Ziegler-type polyethylene is just now showing up in sample quantities, and Phillips is a long way from completing its planned 100-million-lbs./year plant, there's no abundance of material on which to base judgments.

However, from what is known about the structure and properties (*see above*) of the different plastics, it's clear that they are more alike than different.

Both materials are essentially single-chain polymers with a bare minimum (if any) of short-chain branching. Consequently, density and crystallinity of both are high. But the higher density of Phillips' Marlex 50 is the clue to what may be the only real point of structural difference between the two.

Reflecting a higher degree of crystallinity, the increment of density seems to spring from a difference in the nature of unsaturation of the two polymers. The Phillips polymer appears to possess only terminal unsaturation, with few (if any) double bonds within the polymer chain. Ziegler polyethylene can, in theory, match this condition; but in practice it has been found to contain significant internal unsaturation.

Double bonds within the molecule tend to keep polymer chains apart. Terminal double bonds, on the other hand, do not materially interfere with close packing, thereby make for a denser, more crystalline molecule. This condition is underscored by the relative stiffness of the two types of plastic: the more crystalline (said to be about 95%) Marlex 50 shows 140,000 psi., while the top value for the Super Dylan family is 100,000 psi.

Same Claim: What these structural differences will mean in terms of commercial uses is now a moot question. But it's significant that Phillips and Koppers are claiming essentially the same potential applications for their respective products.

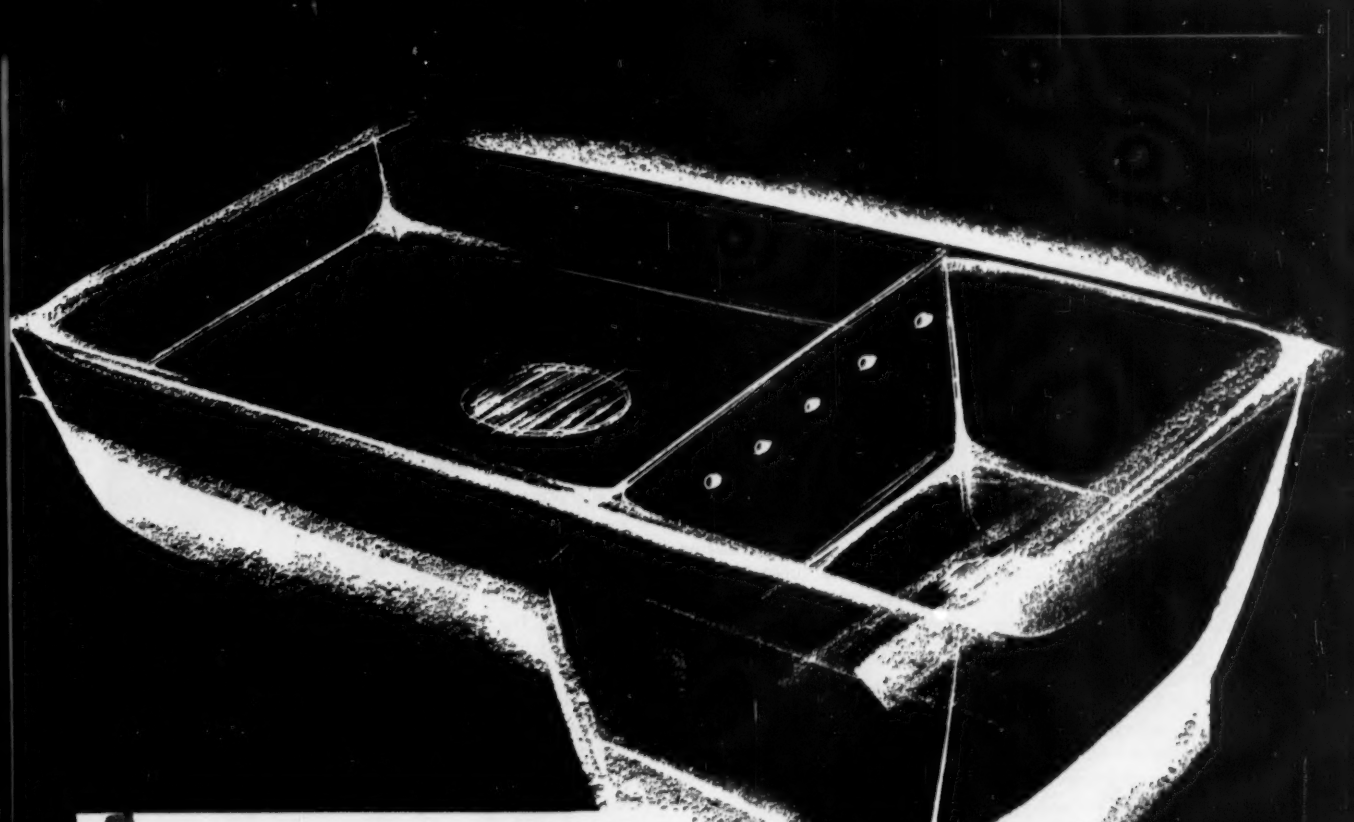
Both firms cite pipe, films, bottles, kitchenware and structural parts of various kinds. Phillips is pointing out to film makers that the very low moisture-vapor permeability of Marlex 50 will permit them to reduce film thicknesses, use less polyethylene than they now do to obtain films that are equally impervious.

This same characteristic is also expected to remove the chief barrier to the plastic's use in cosmetic bottles. Unlike conventional polyethylene, which reportedly absorbs aromatic essences, the very dense material is said to leave odors and flavors intact.

Low-pressure polyethylenes are also claimed to be promising for fibers that may be woven into filter cloths, used in tow lines, etc.; laminated paper coatings and wire insulation are other possibilities now under study.

Difference of Opinion: The consensus of Ziegler licensees, at any rate, is that their polyethylenes will be vying on fairly equal terms with Phillips'. Phillips, however, believes that its product will be better suited to many of these jobs.

Only time and increased production will tell. Thus far, not enough low-



Could millions of photography fans make a market for a portable dark room sink?

LOW-COST PRODUCTION OF SUCH AN ITEM IS PRACTICAL WITH REINFORCED PLASTICS!

The need for a dark room sink is keenly felt by millions of men and women whose hobby is photography. They now lack proper facilities for doing their own printing and developing.

Their problem could be solved by a portable unit which sets up quickly in basement, kitchen or bathroom—and stores out of sight in a closet.

The ideal material for such a sink is at hand. By using fibrous glass, bonded with polyester resins, the sink could be molded in one piece. Its weight would be negligible. Its strength would be great. And its cost could be low.

Rounded corners would assure easy, thorough cleaning. There would be no worries about corrosive chemicals damaging the sink—no rust to contaminate prints.

The use of reinforced plastic materials grows every year. They are already widely applied to sports car bodies, boats, corrugated building panels, modern furniture.

Monsanto supplies the basic ingredients for polyester resins. These include Monsanto *styrene monomer* and *phthalic* and *maleic anhydrides*.

If you would like a glimpse of other possible new uses for reinforced plastics, you are invited to request "A Sketchbook of Profitable Products." Write on your letterhead to Monsanto Chemical Company, Plastics Division, Dept. CW-7, Springfield 2, Mass.

MONSANTO

SERVING INDUSTRY...WHICH SERVES MANKIND

pressure polyethylene of any kind has been seen and tried under conditions of actual use.

Koppers is shipping a small amount, though still trying to clean several bugs out of its process. Carbide, another Ziegler licensee, is also working to perfect the process, has nothing for the trade right now. Du Pont has only just begun constructing a pilot plant (*CW, June 4, p. 58*), while other Ziegler licensees are apparently still watching and waiting.

Phillips likewise has produced only small quantities of polyethylene. The company has licensed no one yet, although it is reputed to have received numerous license requests from this country and abroad.

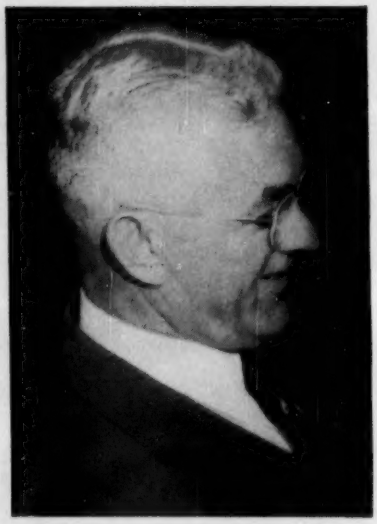
Running Apace: German activity in low-pressure polyethylene appears to be running apace with that of the U.S. An experimental Ziegler-type plant recently went onstream at Farbwerke Hoechst A. G., which expects to bring in a large plant by the end of the year.

And Kohle-Ol-Chemie (recently formed by Deutsche Erdol A. G., Farbwerke Hoechst and Mannesman A. G.) is reported to be planning a 24,000-ton/year Ziegler-process plant in Gelsenkirchen on the Rhine-Herne canal. Initial output, expected by spring of 1957, is intended for use by Mannesman in the manufacture of pipe and sheet.

Bid for Independence

Talk of improvements in the recently developed synthesis of natural rubber raised speculation, this week, about the synthetic's commercial prospects. Best trade guess: five years before developer Goodrich-Gulf Chemicals, Inc. (Cleveland) will be supplying the synthetic for tires. And, with luck, the process could make B. F. Goodrich Co. (a joint holder along with Gulf Oil) independent of natural rubber in a decade, or less.

Officially, Goodrich-Gulf isn't ready to say much more than it has to date—namely that its chemists have duplicated natural rubber in the test tube.



GOODRICH-GULF'S BURT: For natural rubber, a synthetic twin.

The firm's president, William Burt, tells *CW* the new rubber is still strictly in the research stage, isn't even being pilot-planted as yet. While declining to disclose if and when a plant will be built to produce the elastomer, Burt does point out that the future price and availability (e.g., in event of a national emergency) of natural rubber will have a lot to do with any decision to market the synthetic variety (now undergoing evaluation).

Moreover, it's not likely that the latter can match the price of natural rubber (currently around 34¢/lb.) for some time to come.

But such an eventuality is entirely possible, if raw materials guessers are correct. Their selection: isoprene, obtainable from Gulf-supplied natural gas. This is purely a guess; Goodrich-Gulf hasn't, as yet, revealed its starting materials. All the firm admits is that they differ from the materials (e.g., styrene, butadiene, acrylonitrile) used in making synthetic rubber.

Matching the price of the other synthetics (about 23¢/lb) is an even more distant target for the new elastomer. But Goodrich-Gulf isn't too concerned with this problem. Reason: low heat conductivity properties of synthetics militate against their use in articles like truck tires that must dissipate heat rapidly.

The new synthetic would be aimed at uses now dominated by natural rubber, which still retains about two-

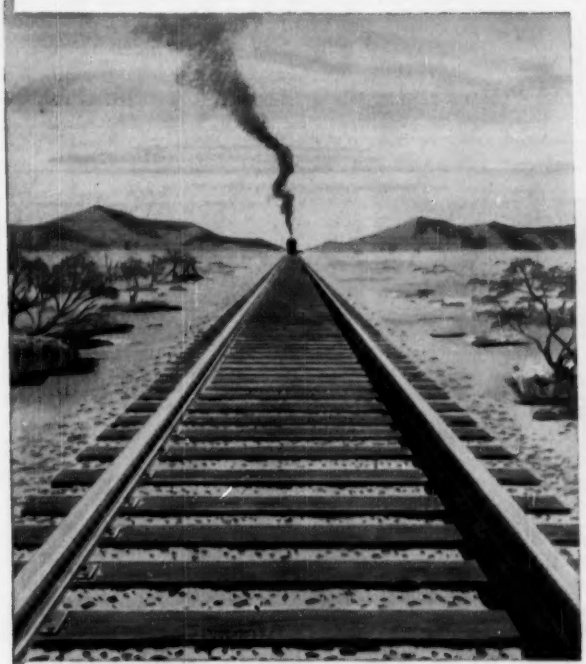
For Deeper Atomic Insight

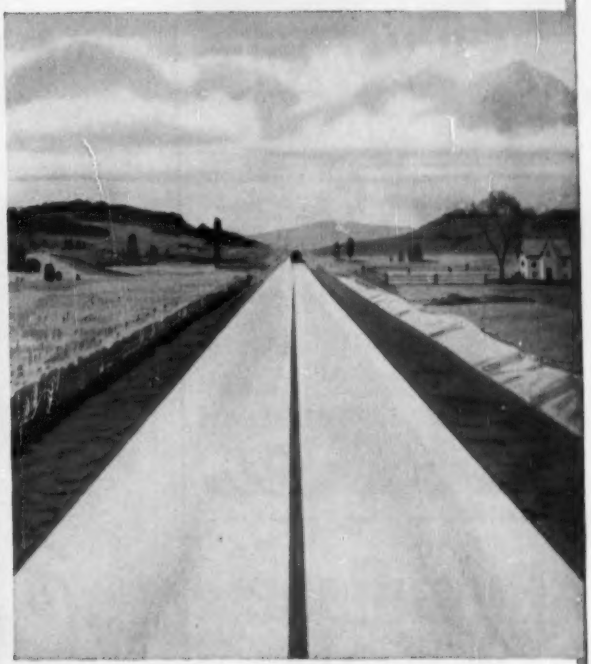
ABRAHAM TAYLOR, physicist of Westinghouse research laboratories (Pittsburgh, Pa.), makes final adjustments on new X-ray apparatus he designed for studies of atomic structure.

Reputed to be up to six times more powerful than available crystallographic X-ray units, the instrument is useful for probing such mysteries as the mechanism of metallurgical reactions and the effect of temperature on crystal structure. Heart of the apparatus is a new type of X-ray tube that yields a narrow, intense beam of rays.

DOW

. . . almost out of sight already . . .





YOUR CAUSTIC ORDER'S ON ITS WAY FROM DOW

The steel rails could be in New York or New Mexico . . . the highway in Oregon or Alabama. Wherever, however . . . it's another caustic soda order on the way from Dow. The order is just hours old, but it's on its way.

Dow's vast and amazingly flexible distribution network is the answer. Three plants and six shipping terminals are tied together by a network of order communications.

Hundreds of caustic customers have learned how resourceful and helpful Dow Technical Service men can be. Whether it's an irritating wrinkle in your processing or a basic decision about the form of caustic you can use to best advantage—a call to Dow brings these trained consultants to you. Surprising savings in plant operations often develop from their visits.

Put your caustic problems "out of sight" for good. Simply make sure your next caustic order is with Dow. THE DOW CHEMICAL COMPANY, Dept. AL 390B, Midland, Michigan.

you can depend on DOW CHEMICALS

DOW

For QUALITY
SERVICE
SATISFACTION
SPECIFY
HAMMOND
Multi Wall
PAPER
BAGS
Betterbags
HAMMOND BAG & PAPER CO.
General Offices: Wellsburg, W. Va.
Plants in Wellsburg, W. Va.
Pine Bluff, Ark. • Charlotte, N. C.

Butadiene
from Ethyl Alcohol
Highest Purity

FALL
DELIVERIES
BY
CONTRACT

PUBLICKER
Chemical Corporation
P. O. BOX 1559
LOUISVILLE, KENTUCKY
SPRING 2-2531

thirds of the market it held before introduction of the World War II-spawned synthetics.

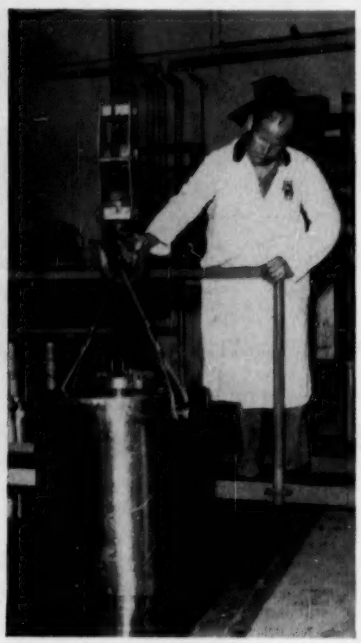
•

Atom Rights: Payment of $400,000 to four atomic scientists has now been authorized by the Atomic Energy Commission for certain inventions in plutonium separation developed prior to entry of the researchers into government work.

Recipients of the settlement are Glenn Seaborg, Joseph Kennedy, Arthur Wahl, and Emilio Segre. Their prewar work at the University of California uncovered the neutron fissionability of plutonium-239; included the discovery that plutonium in its lower oxidation state is separable from the more highly oxidized form.

•

Flavor Research: Campbell Soup Co.'s (Camden, N.J.) President William Murphy says the firm will put heavy stress on flavor research in a long-range program now under way. He told a convention of Investment Bankers of America, at Santa Barbara, Calif., that flavor chemistry is a comparatively unexplored field.



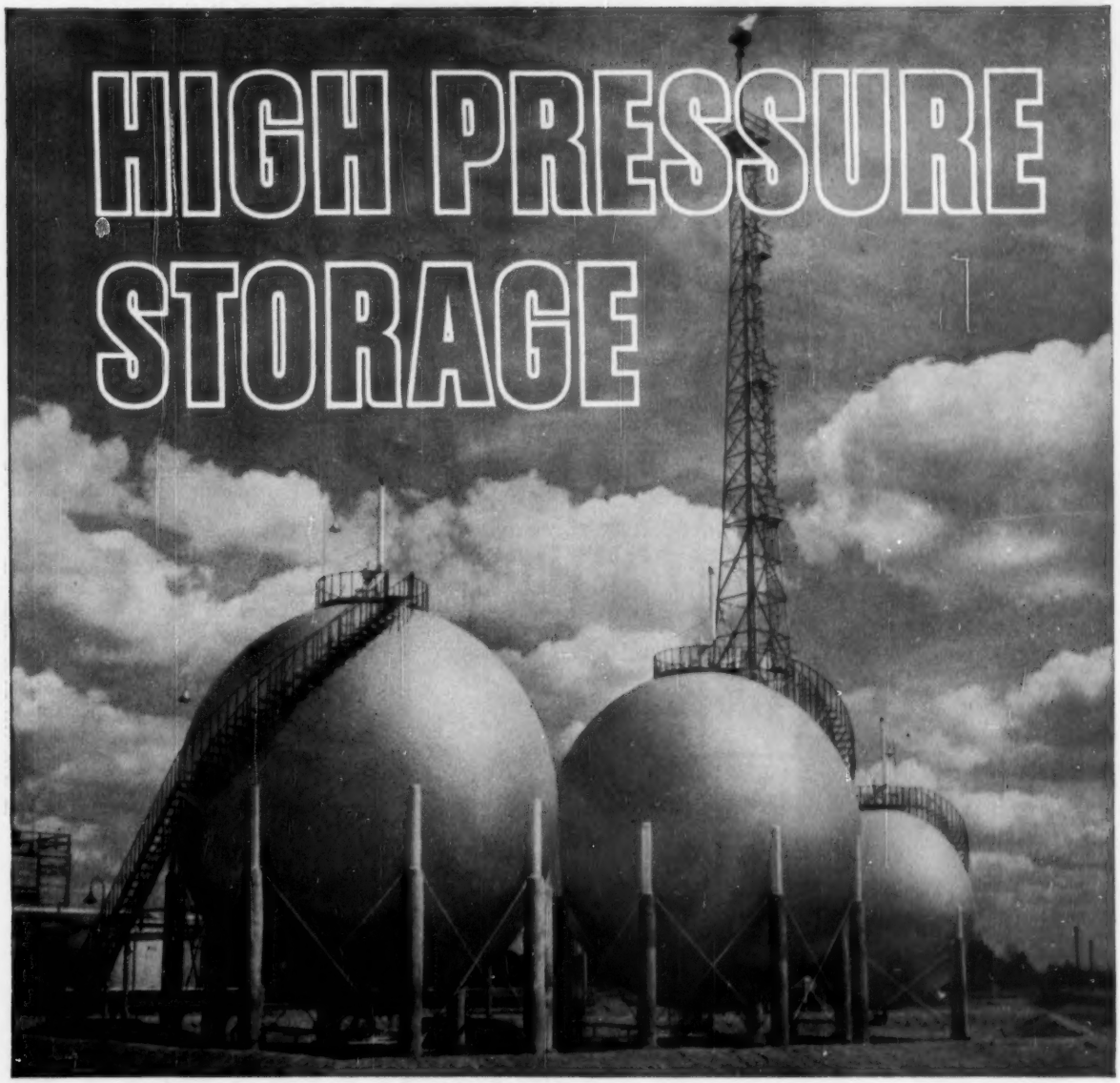
Biggest . . .

FROM THE COOL depths of Brookhaven National Laboratory's water-shielding pit last week came two special packages of radio activity: one of the big lead-and-steel "pigs" *(left)* contained the largest parcel of atomic material especially designed for industrial research; the other, a 13-in.-long cobalt pipe, said to be the most radioactive piece of material produced for nonmilitary use. The "hot" cargoes were bound for the B. F. Goodrich and Esso research centers at Brecksville, O., and Linden, N.J., respectively.

and 'Hottest'

Esso's "hot" pipe (rated at about 3,500 curies) is housed in a concrete "cave" equipped with remote-control devices that permit manipulation of the radiating source and experimental apparatus from outside.

Goodrich, on the other hand, uses the "pig" as permanent housing for its "hot" cobalt slabs. This is said to effectively obviate concrete caves and mechanical manipulators, eliminate water- and air-pollution problems. Materials to be irradiated are placed in any of five chambers built into the "pig."



GRAVERSPHERES

solve gas and liquid storage problems

For pressure storage of process butane, iso-butane, natural gasoline and other volatile liquids and gases, Graverspheres are a "natural."

Graverspheres are formed in Graver shops and are first carefully assembled to insure accurate fit. After this they are shipped to location, erected and field-welded.

These spheres—the very shape of which is ideal for high-pressure storage in quantity—are available in capacities from 1,000 to 30,000 bbl. For gas storage Graverspheres are made to withstand pressures up to 100 p.s.i.g. and for liquid storage from 20 to 90 lb. water pressure.

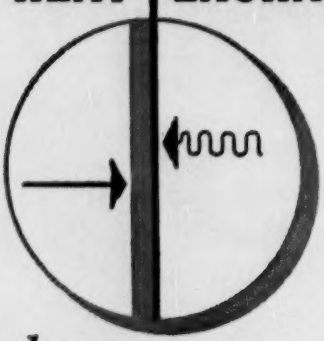
As is the case with Graver tanks, towers and pressure vessels, traditional Graver quality and craftsmanship are inherent in Graverspheres.

GRAVER TANK & MFG. CO., INC.
EAST CHICAGO, INDIANA
CHICAGO • NEW YORK • PHILADELPHIA • EDGE MOOR, DEL.
CATASAUQUA, PA. • PITTSBURGH • CLEVELAND • DETROIT • TULSA
SAND SPRINGS, OKLA. • HOUSTON • ODESSA, TEXAS • CASPER, WYO.
LOS ANGELES • FONTANA, CAL. • SAN FRANCISCO

GRAVER builds tanks, towers and pressure vessels for the chemical and petroleum industries

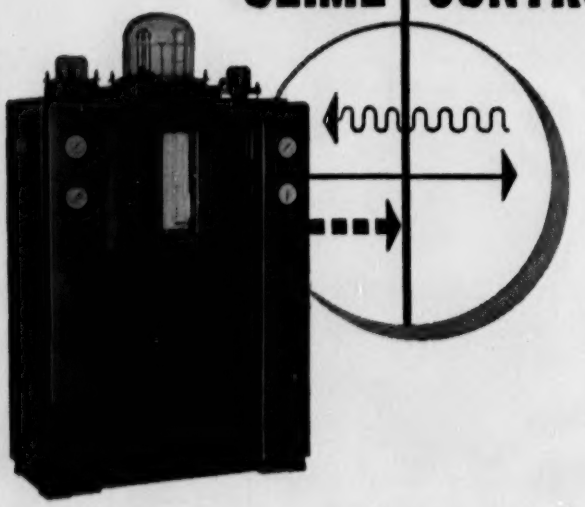
Where you need

HEAT | EXCHANGE



Be sure you have

SLIME | CONTROL



Whether you heat or cool water for make-up, process or any other use, you will need Wallace & Tiernan Chlorination to help combat slime problems introduced by water-borne bacteria or air-borne bacteria.

With slime control equipment designed for any need, built for lasting and dependable service, highly accurate and backed by over 40 years of successful application experience, Wallace & Tiernan Chlorination can help you increase the efficiency of your plant and cut operating costs. For further information write our Industrial Division.

WALLACE & TIERNAN

25 MAIN ST., BELLEVILLE 9, N. J.

CHLORINATORS • CHEMICAL FEEDERS • SCREENING EQUIPMENT • MAGNETIC SEPARATORS • PRECISION PRESSURE INSTRUMENTS • CATHODIC PROTECTION • FINE CHEMICALS

CD-39

Energy Aspirant

Newly disclosed details of the $0.5-million nuclear research reactor planned for the University of Florida (Gainesville) college of engineering emphasize the role it is expected to play in the state's industrial development (*CW, June 11, p. 107*). Floridians, long handicapped by expensive fuel, are banking heavily on cheap atomic power to cut processing costs. To facilitate power studies, the Florida reactor will reportedly have the highest heat rating of any college reactor existing or planned so far.

The Florida entry is expected to have a heat rating of 10,000 kw., should be capable of producing 1,000 kw. of electrical energy or about 20,000 lbs. of steam at 500 F/hour. In neutron flux density, it will also overshadow its collegiate competition, range around 2 x 10^{13} neutrons/sq. cm./second.

In comparison, the next-largest college reactor now contemplated—at the University of Michigan (Ann Arbor)—will have a heat rating of 1,000 kw.

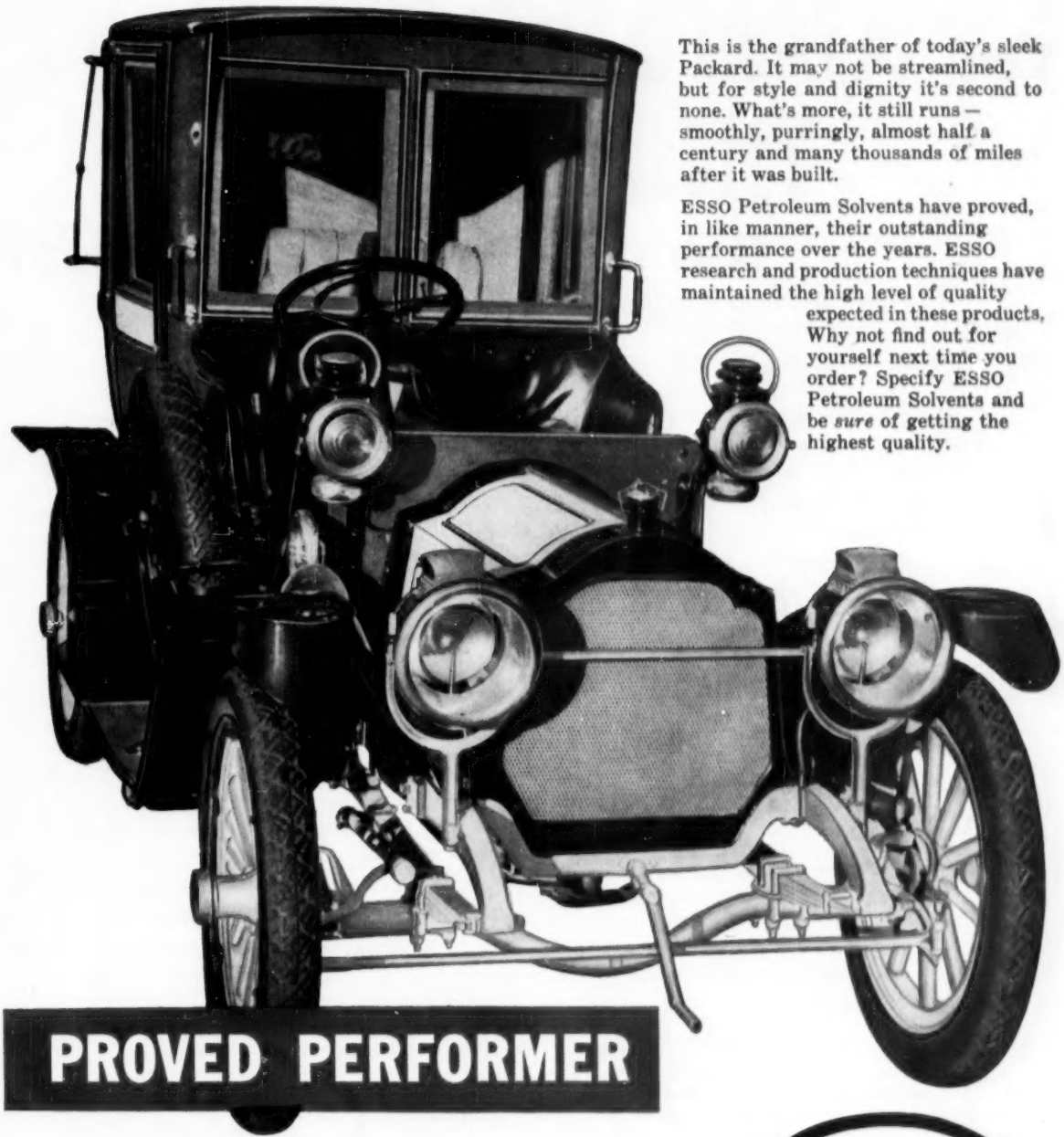
The only college reactor now in action, located at North Carolina State College (Raleigh), has a rating of 20 kw., with no useful power output.

Other research reactors are now taking shape at Pennsylvania State University, University of California at Los Angeles, MIT and Vanderbilt.

Optimistic Floridians expect the state's manufactured goods to reach a value of $3 billion by 1965. If a boost from atomic fuel is forthcoming, this figure is likely to be exceeded.

•

Synergist Study: Recent trials of N-substituted *p*-ethoxybenzamides as synergists in allethrin fly sprays showed a toxicity of the combinations of about 1.7 times that of allethrin alone. Preferred synergists, piperonyl butoxide and sulfoxide, in the same test proportions, produced a three-fold toxicity rise. The investigation was carried out by S. Gertler, W. Gersdorff, and P. Piquett at the United States Department of Agriculture's entomology research branch in Beltsville, Md. Among the compounds tested were N-diamyl-*p*-ethoxybenzamide, N-dibenzyl-*p*-ethoxybenzamide, N-dibutyl-*p*-ethoxybenzamide, N-butyl-4-ethoxybenzanilide, 4-ethoxy-N-ethylbenzanilide, *p*-ethoxy-N-diisopropylbenzamide, and *p*-ethoxy-N-dipropylbenzamide.



This is the grandfather of today's sleek Packard. It may not be streamlined, but for style and dignity it's second to none. What's more, it still runs — smoothly, purringly, almost half a century and many thousands of miles after it was built.

ESSO Petroleum Solvents have proved, in like manner, their outstanding performance over the years. ESSO research and production techniques have maintained the high level of quality expected in these products. Why not find out for yourself next time you order? Specify ESSO Petroleum Solvents and be *sure* of getting the highest quality.

PROVED PERFORMER

YOU CAN DEPEND ON ESSO SOLVENTS FOR

- **MULTI-STORAGE AVAILABILITY** — water terminals in industrial centers.
- **MODERN HANDLING METHODS** — separate tank storage, pumping lines, tank cars and trucks are used in all handling operations. Prompt delivery to your door is assured.
- **CONTROLLED EVAPORATION** — available in a wide range of evaporation rates with precise characteristics to meet your requirements.
- **SOLVENCY** — Esso aliphatics and Solvesso aromatics cover both high and low solvency ranges.
- **FOR TECHNICAL ASSISTANCE** — If you have a solvents problem or want further information on the specifications and characteristics of Esso Solvents — write or call our office nearest you. Our technicians will be glad to assist you.

ESSO

PETROLEUM SOLVENTS

SOLD IN: Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Md., D. C., Va., W. Va., N. C., S. C., Tenn., Ark., La.

ESSO STANDARD OIL COMPANY

Boston, Mass. — Pelham, N. Y. — Elizabeth, N. J. — Bala-Cynwyd, Pa. — Baltimore, Md. — Richmond, Va. — Charlotte, N. C. — Columbia, S. C. — Memphis, Tenn. — New Orleans, La.

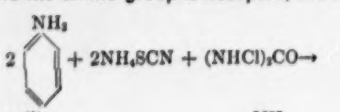
Can AMMONIUM THIOCYANATE be used in your process?

available in crystalline form or 50-60% solution

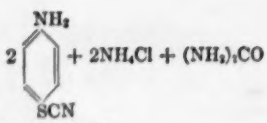
1. The Thiocyanate group can be introduced into many organic compounds by reaction of ammonium thiocyanate with the corresponding halide.

2. Thiocyanogen can be generated by the electrolysis of an aqueous solution of ammonium thiocyanate.

3. Aromatic thiocyanates can be prepared with ammonium thiocyanate with the aid of chloramides. The thiocyano group easily takes up the position para to the amine group, especially when one or both meta positions are vacant. If the position para to the amine group is occupied, the thiocyano group



aniline

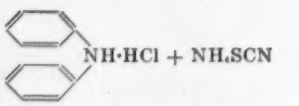


4-thiocyanoaniline

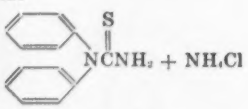
enters one of the ortho positions, but only with difficulty, with excessive heat liberation, and with the formation of a thiazole.

4. Some amine salts react with ammonium thiocyanate to give the corresponding amine thiocyanates.

5. Some amine salts yield the corresponding thioureas.



diphenylamine hydrochloride



N,N-diphenylthiourea

6. Guanidine thiocyanate may also be prepared in 90% yield by heating dicyandiamide with ammonium thiocyanate.

7. Amidines can be prepared by heating nitriles with ammonium thiocyanate at approximately 180°C.

8. 2-Thiohydantoins can be synthesized from acyl derivatives of α-amino acids with ammonium thiocyanate in acetic anhydride solution.

Baker Ammonium Thiocyanate is a product of synthesis stable at ordinary temperatures.* The crystalline material is soluble, clear, colorless, odorless. These advantages all contribute to economical, more trouble-free manufacturing.

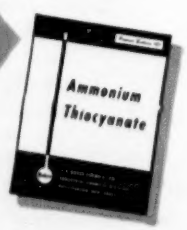
Because Baker controls all of the raw materials that go into Baker Ammonium Thiocyanate, you are always assured of uniform quality, and scheduled availability.

Baker Ammonium Thiocyanate in crystalline form is packaged in 200, 100, and 25-pound fibre drums—all polyethylene-lined. The 50-60% Solution is available in 8000-gallon tank cars. For further information, address: J. T. Baker Chemical Co., Executive Offices, Phillipsburg, N. J.

**Picks up moisture...should be kept in tightly closed containers.*

FREE UPON REQUEST!

Valuable Ammonium Thiocyanate Product Bulletin giving data on its properties and uses of Ammonium Thiocyanate, properties of aqueous solutions of Ammonium Thiocyanate, etc. Address your request to J. T. Baker Chemical Co., Phillipsburg, N. J.



Baker Industrial Chemicals

"Purity by the ton"

Baker CHEMICAL

RESEARCH . . . . . .

Activity to Spare: What may be the most active cortisone-type steroid known was recently discovered by chemists of Merck & Co. It's 1-dehydro-9-α-fluorohydrocortisone, one of a group of four 9-α-fluorinated steroids synthesized in the Merck study. In mouse-liver glycogen assays, the compound showed 25 times the activity of hydrocortisone acetate.

•

Patent Lowdown: The first in a series of four volumes on nonprofit research and patent management is available from Patent Policy Survey, National Research Council. Called "Nonprofit Research and Patent Management Organization," the volume contains a detailed analysis of the structure of 104 research institutes and patent management agencies, their objectives, operating procedures, institutional affiliations and experience with research and patent management problems. Authored by Archie Palmer, chairman of the government patent board, the publication is designed to aid industry and government in research-sponsoring activities. Cost: $3/copy.

•

New Chemicals: Sample quantities of phenanthrene, fluoranthene and pyrene are available from Carbide and Carbon Chemicals. All the new chemicals are highly pure, should spark application research among potential consumers in several fields. According to Carbide, they are under study as intermediates for pigments and rubber chemicals; uses exist in the preparation of dyes and pharmaceuticals. The company expects to offer commercial quantities of the three coal-hydrogenation products by the end of the year.

•

Freeze Facts: The first salt to precipitate from freezing sea water is sodium sulfate decahydrate. That and other chemical data on the freezing of sea water is contained in a new government report entitled "Deposition of Salts from Sea Water by Frigid Concentration" (PB 111606). The publication may be had from Office of Technical Services, U.S. Dept. of Commerce. Cost: $1/copy.

•

Glycerine Booster: Nominations for the fourth annual glycerine research awards are now being accepted by the Glycerine Producers' Assn. Eligible: research bearing on the chemical,

ALKALIES

CAUSTIC SODA
CAUSTIC POTASH
SODA ASH
SODIUM BICARBONATE
CALCIUM CHLORIDE
SODIUM SESQUICARBONATE
SODIUM CARBONATE MONORYDRATED
SPECIAL ALKALIES

• *Stocked throughout the country*

McKESSON & ROBBINS
INCORPORATED
CHEMICAL DEPARTMENT
Nationwide distributors of heavy and fine chemicals
Boston • Burlington • Cedar Rapids • Chicago • Cleveland • Dallas • Davenport • Decatur
Des Moines • Detroit • Houston • Los Angeles • Milwaukee • Mobile • New York • Omaha
Peoria • Philadelphia • Phoenix • St. Paul • St. Louis • San Antonio • San Diego • Wichita

At purchasing I'm on the ball,
from valves to ethyl alcohol.
It's really simple! Look and see...
how the Buyers' Guide works for me.

Purchasing executives acclaim the BUYERS' GUIDE of *Chemical Week* as the one indispensable buying authority. The most widely distributed and complete purchasing handbook in the market, its 860 pages are brimful of quick-to-find information to ease your purchasing headaches.

Use your copy of the BUYERS' GUIDE next time you need buying information in a hurry. Its four big sections are ready and willing to go to work for you. For sources of both chemicals and process equipment, the BUYERS' GUIDE has all the right answers.

Chemical Week *Buyers' Guide*

McGraw-Hill Publishing Company
330 West 42 Street, New York 36, N. Y.

to give you
faster bag filling—less waste

T-P HI-POROSITY, HI-STRENGTH PAPERS
CUT FILLING LOSSES TO A MINIMUM

Bag filling can be a quick and simple operation that moves along without a hitch. Or it can be an expensive headache of torn bags, spillage and poor efficiency.

To give you just the bag your operation calls for, Thomas Phillips' paper experts spend considerable time studying the various bag filling processes.

By fully acquainting themselves with actual on-the-job conditions, Thomas Phillips' engineers have developed extra strong sacks that can take large quantities fast without tearing. They have greatly increased porosity to reduce powder, cement and flour filling losses. In fact, whatever your filling problems, you should talk with Thomas Phillips' experts; chances are they have the answers.

Thomas Phillips is a fully integrated paper mill—from pulp to finished product. They can furnish shipping sacks of every type and size—one to five walls. Send for free literature illustrating complete line.

Thomas Phillips co.
AKRON, OHIO

RESEARCH . . . . .

physical and physiological properties of glycerine, glycerine derivatives and glycerine-containing materials. Studies directed toward new uses for glycerine will "merit special consideration," states the association.

•

Dark Combination: Researchers D. A. Barr and R. N. Haszeldine of Cambridge University (England) have discovered that trifluoronitrosomethane combines with tetrafluoroethylene in the dark at −45 C to yield a colorless viscous oil that is unaffected by solvents, hot concenterated sulfuric acid or hot concentrated potassium hydroxide. A new type of copolymer, the oil is reported to contain the monomeric reactants in 1:1 ratio; mean molecular weight was found to be in excess of 7,000.

•

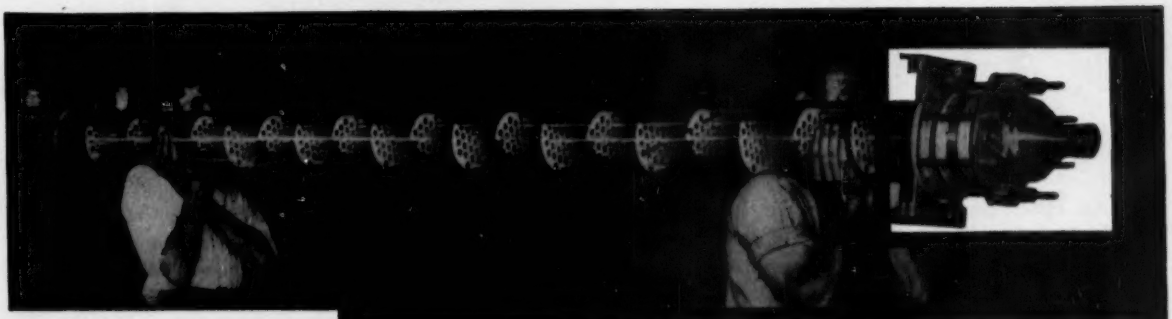
New Systemics: Salts of O,O'-diethyl S-β-diethylphosphorthiolate were recently found to be effective systemic insecticides. Imperial Chemical Industries' R. Ghosh made the discovery, reports that less than 2 ppm. of chemical in a direct-contact spray gave a 50% kill of red spider mites. Absorption of compounds of this type by plant foliage is said to be rapid. Patent applications have been filed.

•

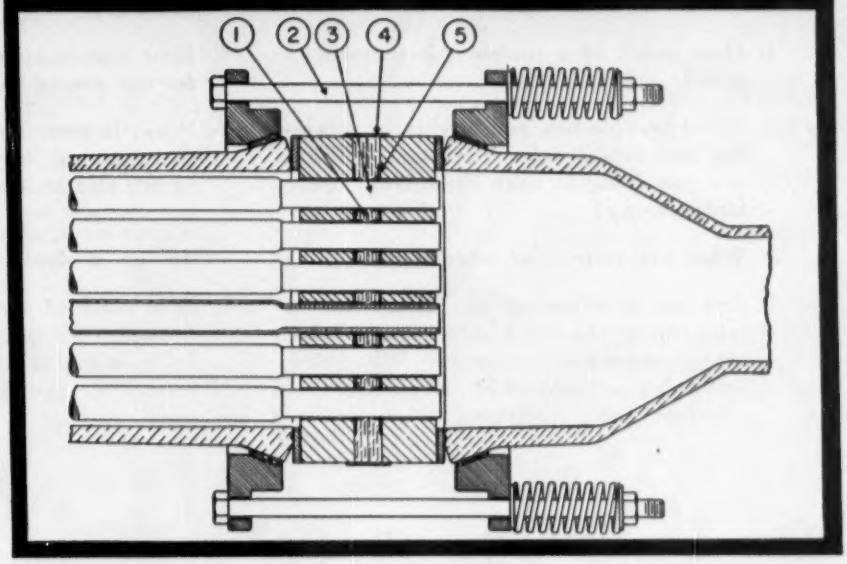
Black with a Bang: New, fine-grained, "blacker" carbon blacks are said to result from an unusual explosive process developed by Harvard's G. B. Kistiakosky and co-researchers, and assigned (U.S. patent 2,690,960) to Godfrey L. Cabot, Inc. (Boston). Here's how the method works: a highly unstable hydrocarbon-containing material is loaded into a retort, where it is separated from a detonation charge by a thin diaphragm or wall of inert gas. Ignited by an electric spark, the charge is converted into carbon black in less than 0.00001 second.

•

Fungus Fighters: Cellulose ethers, prepared by treating 1,2,4-trichloro-3,5-dinitrobenzene with sodium cellulose or sodium salts of cellulose glycollic acid ethers, make promising fungicides, according to Badische Anilin- & Soda-Fabrik. The 4,5-dichloro-2,6-dinitrophenyl ether of cellulose reportedly prevents the growth of *Aspergillus niger* in dilution of 1:30,000.



Fluids in shell or tube contact only glass, chemically resistant ceramic, or Teflon. One 50 ft.² unit requires floor space of 9″ x 13′6″; with 13″ of vertical height. *Now you can say good-bye to heat exchanger corrosion and contamination problems.*



Detail of header assembly for handling corrosion product in both shell and tubes. The unique "fluid" seal between the shell side and the tube side is effected by a Silastic sealer sheet (1). This acts as a fluid and is put under fluid pressure by tightening the flange bolts (2). The fluid is completely contained in the cavity formed by the tubes (3) and the retainer ring (4) around the outside of the tube sheets. The Silastic sealer sheet is compressed against the Teflon sealer sheet protector (5), which presses against the precision finished tube ends, creating a leak-proof seal.

NEW glass shell and tube heat exchanger gives complete protection from corrosion

Here's real news, if your heat exchangers must handle materials that eat the heart out of metals . . . or chemicals that are sensitive to even slight metallic traces, or fluids that quickly foul the tubes.

The new PYREX brand glass shell and tube heat exchanger offers these seven advantages:

1. **Complete protection** *against product contamination and corrosion.* No metal parts exposed internally. Use it for all fluids (except those containing hydrofluoric acid, or hot concentrated phosphoric acid, or alkalies).
2. **Easy Cleaning**—The smooth, hard glass is easy to clean. You can *see* when cleaning is needed—and when it's complete. Can be cleaned with hot mineral acids.
3. **Flexibility**—Switch from one product to another quickly and easily. Corrosive material may be used on *either* shell side or tube side.
4. **High Efficiency**—Light tube walls give a high wall conductivity coefficient (h=260 BTU/hr./ft.²/ Deg. F.). Freedom from deposits *keeps* efficiency high, no allowance needed for fouling or scaling.
5. **Versatility**—Useful for cooling, condensing, heat exchanging and for refluxing or partial condensing.
6. **Compactness**—Needs only 9″ x 13′6″ of floor space and only 13″ of height for one 50 ft.² unit. Stack units vertically in series or parallel without additional floor space. And it's so light (only 165 lbs.) two men can handle it easily.
7. **Economy**—The first six features add up to operating economy. But that's just the start! Initial cost is much lower than for most equal-capacity corrosion-resistant shell and tube exchangers. Coolant costs less where you can use sea or river water. Installation is lower. Since glass never wears out, you get long service with no replacement parts worries.

Send for more information—Let us send you more detailed information about this remarkable new PYREX brand glass unit. Just write, wire, or phone Corning Glass Works, 43-7 Crystal Street, Corning, N. Y.

CORNING GLASS WORKS, Corning, N.Y.

Corning means research in Glass

As 1955 slips into its second half, chemical sales managers are having their troubles with the current boom. Last week, CW felt the industry's sales pulse as it asked these questions:

1. **How much of a problem is reciprocity now?**
2. **What trouble are you having in retaining competent sales personnel? What are you doing to keep them from being stolen away?**
3. **What are your chief worries today?**
4. **Are you confronting any difficulties in integrating the sales department with other corporate functions? What are you doing to improve interdepartmental relations and functioning?**
5. **What trends do you see in customer service? Are you extending service to your customers' customers, offering management advice, upping service in general?**
6. **How does sales and profit picture look for the second half of 1955?**
7. **What is your main problem in getting the most out of your distributors, sales agents and brokers?**
8. **As you see it, what are the trends toward the use of visual selling tools?**
9. **How much of a problem is the time lag between the time a salesman obtains field information and the time it is worked up and made available for management use?**

Managers Speak: Sales Boom, But . . . . . .

Whatever the times may be, good, bad, or just so-so, chemical sales managers can always count on problems. True, the worries are apt to vary with the times, but they never disappear. In the past week, CW puts its stethoscope to the heart of chemical selling, found it in the pink of condition but troubled a bit with pains born of prosperity. Here is a snapshot of current sales problems and trends in the approaches to them:

1. Reciprocity. By and large, reciprocity appears to be dying down. This is generally true whenever chemicals tend to be in "tight" supply. But although there seems to be less of it now, some firms are having difficulties. Sample comments:

• "An important sales tool for the small company and a necessary evil for the large company"; ". . . is a less significant factor than it was 18 months ago."

• "Reciprocity isn't much of a problem—we haven't lost much tonnage to it"; ". . . don't run into it as much here (Texas) as in the East"; ". . . run into it very infrequently."

• "It's as bad as I've ever seen it." ". . . Big problem . . . has robbed us of business in two instances recently . . . but it's a necessary evil."

2. Maintaining sales staffs. Keeping salesmen after they've been hired and trained is a problem that appears well licked. Most companies hold off pirating with deluxe fringe benefits—retirement programs, insurance plans, stock purchase plans. The stand-by, however, is money and promotion; companies are making a practice of periodic increases and pushing men ahead as fast as vacancies and competence permit.

Increasingly prevalent as a device to retain the staff is the introduction of incentive plans. A few firms that never had them have installed commission systems, one is now seriously considering such a plan. And several are stressing a "make-our-company-your-career" indoctrination program.

3. Worry. That perennial headache of sales managers—where to get good salesmen—continues unabated, still heads the list. Indications are, though, that obtaining the production capacity to meet orders will soon give salesman-hunting a close race. Also running strong: how to keep sales costs in line. Representative comments:

• "Our biggest problem . . . is obtaining manpower for the future. We're now sending out top- and second-level executives to encourage high school students to take courses that will equip them for chemical sales later on."

• "Lately we've found that . . . sales are actually ahead of production. If it existed over a long period . . . further capital investment would be called for. But we're sitting tight until we see what the second half brings."

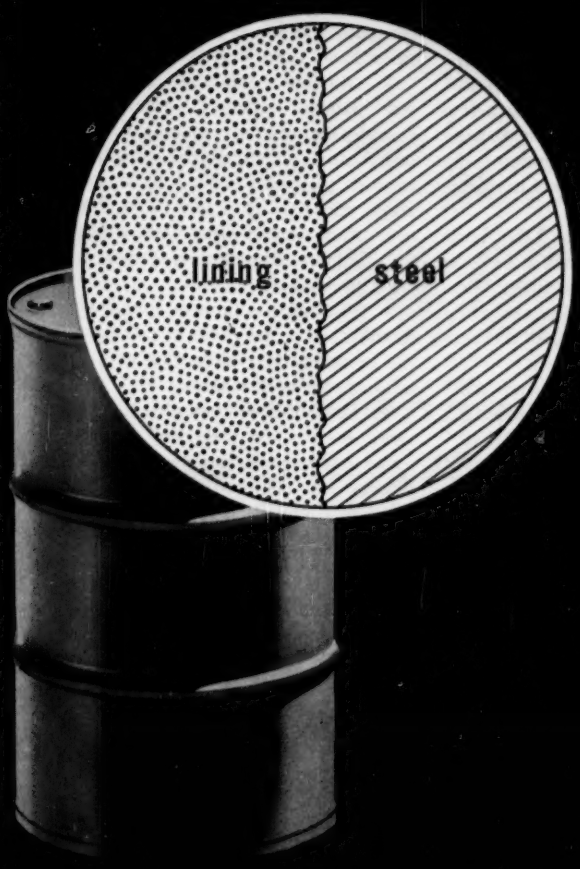
• "My two top worries are the labor situation in general and being able to produce to meet demand. I'm breathing easier since auto's settled down. But business is so good you've really got to hump to meet it."

• "Finding high-type individuals and speculating on how long the boom will last."

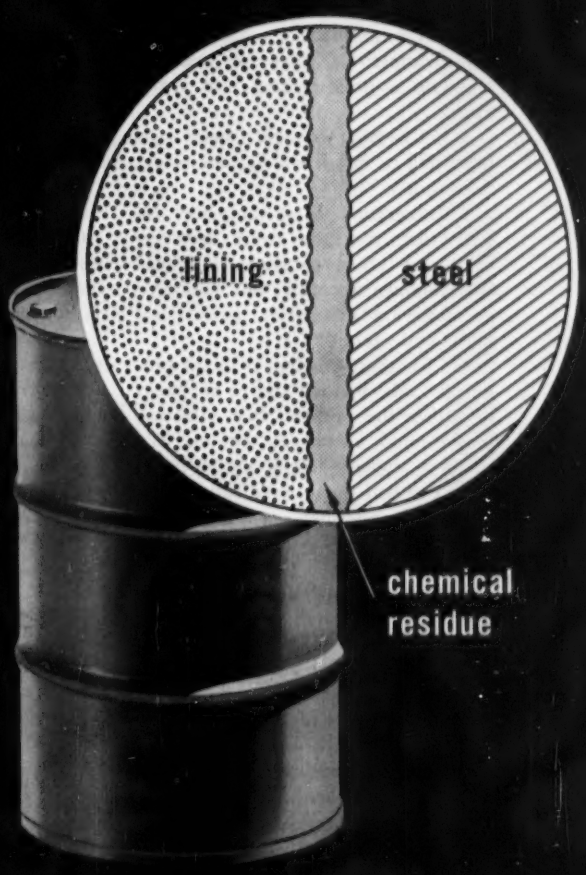
• "No. 1 problem: not enough production; No. 2: tank-car shortage."

• "Our toughest problems: maintaining price stability because of overcapacity, getting new sales people,

RHEEM DOES THIS . . .



INSTEAD OF THIS . . .



...to give you longer lasting linings for steel drums

Rheem-lined steel drums *last longer,* and here are two good reasons why:

1. INTEGRATED LININGS 2. SHOT-BLASTING

Yes, Rheem linings are bonded *directly to the steel* with a bulldog grip. They're *integrated* linings. There's nothing between the steel and lining to cause flaking or peeling—*nothing that can be attacked by packaged chemicals!* And the linings last longer.

Rheem *physically* cleans and roughens its steel by shot-blasting. Bombarding the steel with high-carbon shot, Rheem can thoroughly remove scale *and* properly roughen the surface that must accept the lining. There is no chemical residue that could interfere with the lining application, and the hills and valleys of the steel offer a more positive gripping surface for the lining.

Next time you place an order for steel containers, remember this: Only *Rheem* drums have *integrated* linings. And because they last longer, they give you better protection for your product.

YOU CAN RELY ON Rheem MANUFACTURING COMPANY

7600 S. Kedzie Chicago 29, Ill.

World's Largest Manufacturer of Steel Shipping Containers

RICHMOND AND SOUTH GATE, CALIF., HOUSTON, CHICAGO, NEW YORK, NEW ORLEANS, LINDEN, N. J. AND SPARROWS POINT, MARYLAND.

"It's better to ship in steel"

getting field men to acquire perfect familiarity with new products and applications."

• "Main problem? . . . how to remain competitive, pricewise, and still maintain a profit-making cost structure."

• "Climbing freight rates . . . have had to install warehouses across the country."

4. Integration. Most companies report that the gear train between sales and other corporate functions was running smoothly, but some are encountering difficulties, particularly with production:

• "Toughest problem is to get production sales-minded and to get them to realize the problem that salesmen face through customer's requests. We invite production people to sales meetings; I've had them make calls in the area with salesmen . . . I plan to have production superintendent go on the road with me."

• In production, the biggest problem is the increased demand to cut down materials. The changing over from one product to another has given us a lot of problems. . . . As for the Credit Dept., we're now scheduling mutual calls with sales and credit men to visit some customers to see about their problems.

• "Are setting up regional order processing points rather than putting everything through the home office. This will speed up "fulfillments," especially to distant customers.

5. Customer service. More of it, aid to customers' customers, and more instances of combining service with sales departments—that's the picture for customer service now. Virtually all concerns contacted observed that service is definitely more extensive now than it has ever been. One sales executive offered perhaps the best reason: "It's almost impossible to compete on the basis of quality any more—service is about all that's left where you can compete nowadays."

Extension of customer service to the customer's clients appears, too, to be getting a significant play now. Several companies that felt negligent in using this sales tool are now mapping plans to employ it. One firm, which likes to "steer clear" of secondary-level service prophesied: "You never know when it may be forced on you in the future." And most companies now will offer management advice to customers—although only if solicited. The frequency of management advice service, though, is quite low.

A trend of some years' standing—that of combining sales and technical service departments—is gaining a few more adherents. Main motive: to take technical service off pet projects, sic it on sales-grabbing customer problem-solving.

6. Sales-profit outlook. Like business in general, chemical sales and profits are barreling right along. Pessimists are few and far between when it comes to forecasting what the second half will bring.

• "Very good for the second half."

• "As good as the first half—good."

• "Sold out for the second half."

Much effort is now going into profit making rather than sales increases *per se*. Many are laboring furiously on schemes to jack net profits at a higher rate than sales increases. By overhauling its selling program, one company has hiked profits 70% while sales have risen only 9%.

7. Distributor relations. No consistent pattern emerged among the troubles manufacturers have with their distributors. "Getting the distributor to push your line instead of someone else's" did pop up a few times, however. And, several firms were starting to eliminate distributors. Other isolated problems:

• "Finding the time to spend with distributors to get them to sell hard—the company that does this gets the most out of its distributors."

• "Some still want to give the joint away even when sales are so good. Some still shade prices by giving rebates on returned drums. That's a nuisance now."

Styrene in the Sky

THERE'S NO LIMIT to the ways a plastics producer will promote its products. This year, for the first time, Monsanto is sponsoring an entrant (*above*) in the ninth annual "Powder Puff Derby," a transcontinental airplane race for women pilots.

By coincidence, the race this year runs from Long Beach, Calif., to Springfield, Mass.—both locations at which Monsanto manufactures polystyrene; the company hopes the race will thus dramatize the cross-country nature of its operations. Monsanto will distribute to the contestants special plastic powder boxes at a "take-off" banquet and a polystyrene hobby kit at the end of the flight.

BIG DETERGENT NEWS

Monsanto develops superior, low-dust Santomerse from new alkyl benzene

Santomerse No. 1, Monsanto's all-purpose alkyl aryl sulfonate surface active agent, is now better than ever.

Tests reveal substantial reduction in dusting. The flake is less friable, much stronger. Compounders will find this material is easy to handle and will produce an end product of excellent quality and appearance.

The improved Santomerse No. 1 is made with a new alkyl benzene developed by Monsanto, which you, too, can use to produce a better sulfonate.

The new Monsanto alkyl benzene is less color sensitive and produces a whiter sulfonate. When sulfonated, the odor level is exceptionally low. This is an important feature for manufacturers of liquid detergents.

For details of these and other Monsanto detergent products, write: MONSANTO CHEMICAL COMPANY, Inorganic Chemicals Division, 710 North Twelfth Boulevard, St. Louis 1, Missouri. *Santomerse: Reg. U. S. Pat. Off.*

SERVING INDUSTRY . . . WHICH SERVES MANKIND

MONSANTO
CHEMICALS – PLASTICS

the consistent uniformity and purity of

ESPESOL SOLVENTS

help assure a steady flow of repeat paint sales

The solvent you use in the manufacture of your paint has as much to say about the repeat sales-success of your product as any other ingredient. Let Espesol Solvents enter into the production of your paint. These superior aromatic and aliphatic solvents must meet exceptionally rigid specifications for purity, uniformity and quality.

Using Espesol Solvents, you can expect to produce a paint that is *consistently* good . . . one that gets continued acceptance in the market place. Use the coupon below to get our complete catalog. See how Espesol Solvents can help give your paint greater repeat sales power.

ESPECO

EASTERN STATES *Chemical* CORPORATION

P. O. Box 5008 • Dept. C-795
Houston 12, Texas • Phone Wentworth 1651

Please send me your catalog on aromatic and aliphatic solvents.

NAME_____
FIRM_____
ADDRESS_____
CITY_____ ZONE_____ STATE_____

Chicago Office: 1011 Lake St., Oak Park, Ill., Phone Village 8-5410
New York Office: 630 Fifth Ave., New York, N. Y., Phone Circle 7-2320

DISTRIBUTION. . . .

• ". . . Outstanding problem is to convince him to sell higher-volume but lower-profit items; i. e., have him spend equal time on all products rather than concentrate on high-profit items."

8. Visual aids. Wider use of visual selling tools appears to be in the making . . . in a limited way. About as many companies reported extensive use of eye-impressors as report little use or none. But companies employing such tools are strong in the belief that a definite trend is under way and some firms that aren't using visual aids voice misgivings about their policy.

One company, which doesn't "go in for a lot of visuals," has developed a useful variation. It sends an industrial designer with a station wagon chock full of finished plastic products around to call on molders, suggest new products to them. This practice, reports the firm, is an effective instrument of sales.

Reluctance of sales managers to go overboard on visuals stems from two facts:

• Applications of some chemicals are difficult to portray visually. A lab demonstration is more effective.

• The strong emphasis on sales cost-cutting works against use of visuals—usually not any too cheap.

9. Information feedback. In this area, that of "sales reconnaissance," chemical companies are meeting few difficulties. Almost all get their information while it is still fresh. More and more firms are equipping salesmen with transcribing equipment. Call reports are dictated and the record mailed to headquarters right away. Some evidence cropped up, too, that larger companies were delegating more authority to district field managers to speed information flow.

•

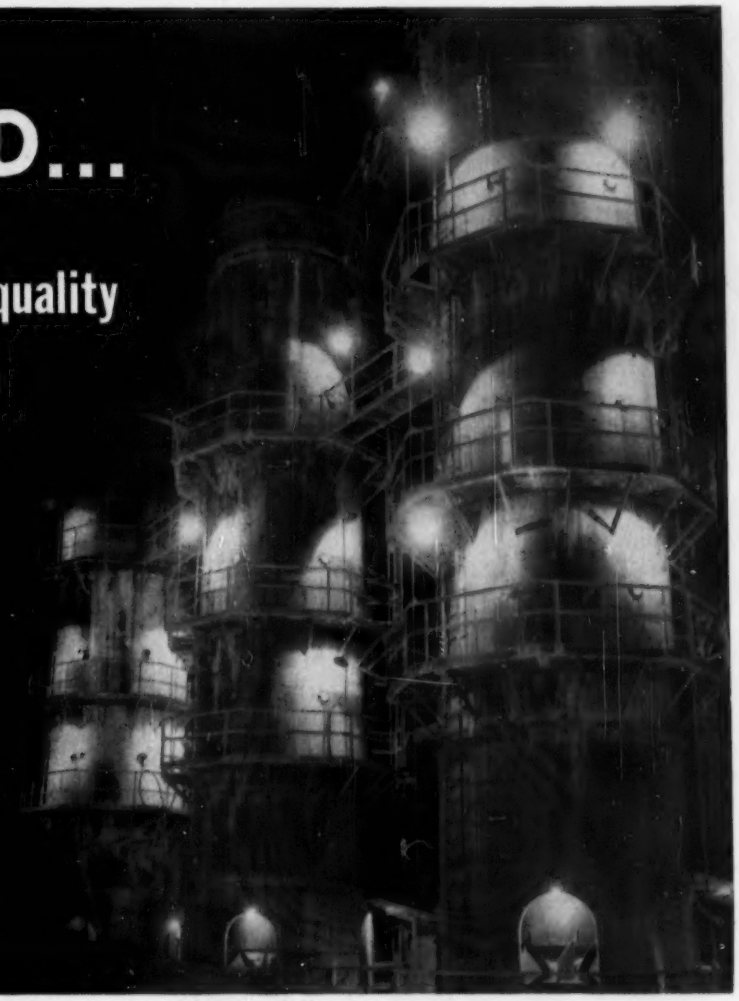
For Tomorrow's Reference: Protective coatings—19-p. booklet furnishes physical and chemical data, information on coating selection, and other information on some 14 varieties of coatings. Atlas Mineral Products Co. (Mertztown, Pa.).

• Activated carbon—7-p. bulletin provides information on the characteristics and applications of the material. Barneby-Cheney Co. (Columbus, O.).

• Inventory control—16-p. brochure describes the characteristics of inven-

WEST END...

'round the clock source of finest quality SODA ASH



Giant kilns burn lime and coke to make carbon dioxide. This gas is used to separate the soda ash base from the brine that is pumped in from the natural deposits of Searles Lake in the California desert. The burned lime by-product is conveyed to a special plant where it is processed into hydrated lime—another product of West End Chemical Company.

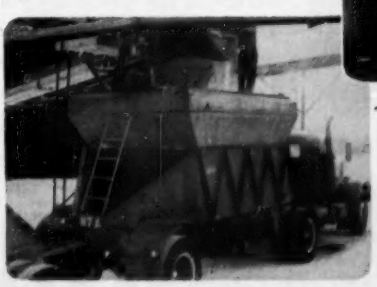
The manufacturing, storage and shipping facilities of West End are constantly at work for western industry. This continuous operation provides ample soda ash to supply both immediate requirements and maintain a vast reserve. Regardless of market conditions, West End meets all normal and emergency needs of western industry promptly. Strategic location of plant permits fast, economical transport by rail or truck to any point in the West.

Write for samples, prices and technical data.

WEST END CHEMICAL COMPANY

SODA ASH · F. M. SMITH BRAND BORAX · HYDRATED LIME

PERSONAL SERVICE — Customers anywhere in the West are only a few hours away by company plane.



IMMEDIATE SHIPMENT to customers throughout the West in company's own leased hopper cars . . . ready at all times.

30 MINUTE IN-AND-OUT LOADING for bulk trucks at any hour of day or night through "serve yourself" delivery.

West End Chemical Co.

Executive offices: 608 Latham Square Building, Oakland 12, California · Plant: Westend, California

OLDBURY
1896

Set to serve . . .

An industry, to do its job well, must give of its "mind-power" as it does of man power and machines. This we do.

How may our chemicals serve customers better? Where may we provide the chemical means to help solve new formulation problems in industry . . . in agriculture . . . or wherever? Pure, uniform, reliable as any product bearing the Oldbury name must be, our "mind-power" is here as well to serve you in confidence so that Oldbury products may serve you in fullest measure.

OLDBURY
ELECTRO-CHEMICAL COMPANY

Executive Offices: NIAGARA FALLS, NEW YORK
Sales Office: 19 RECTOR STREET, NEW YORK 6, N. Y.
Plants: NIAGARA FALLS, N.Y. COLUMBUS, MISS.

Rely on
CARBIDE AND CARBON
for the widest choice of commercial alkyl amines:

* **ETHYL**
* **DIETHYL**
* **TRIETHYL**
* **ISOPROPYL**
* **DIISOPROPYL**
* **n-BUTYL**
* **Di-n-BUTYL**
* **2-ETHYLHEXYL**
* **Di-2-ETHYLHEXYL**

...an assured supply of quality alkyl amines:

CARBIDE has been producing alkyl amines from basic raw materials for over 20 years. When you buy from CARBIDE, you can rely on their experience to give you quality alkyl amines in the quantities you want and at the time and place you want them. Call or write the nearest CARBIDE Office today.

CARBIDE AND CARBON CHEMICALS COMPANY
A Division of
Union Carbide and Carbon Corporation
UCC

30 E. 42nd St., New York 17, N. Y. Offices in Principal Cities
In Canada: Union Carbide Canada Limited, Toronto

DISTRIBUTION. . . .

tory control and how business machines assist such control. Remington Rand Inc. (New York).

•

All About Trademarks: The U.S. Trademark Assn. (New York) is bringing out the results of a three-year research project in a new book, "Trademark Management – A Guide for Businessmen." Designed to give the executive a working knowledge of trademarks, the 130-p. book avoids legal phrasing. Among topics covered: Choosing the Right Trademark; Registration; Proper Use of Trademarks; Internal Administration of Trademarks; Policing of Trademarks; Tradenames; Foreign Problems.

Matchbook Match

CHEMICAL COMPANIES are once again vying for matchbook advertising's most coveted award, the "Joshua" plaque, named after the inventor of matchbooks, Joshua Pusey. First entry from the chemical industry for 1955 (*above*) is from the Van Straaten Chemical Co. (Chicago).

Several hundred chemical firms are expected to compete in the annual contest. Matchbooks will be judged by a group of marketing and advertising experts for the effectiveness of copy, artwork and design, and typography in carrying a sales message.

HARSHAW

FLUORIDES

BORON TRIFLUORIDE
HYDROFLUORIC ACID
ANHYDROUS . . . AQUEOUS

Harshaw has been a pioneer in the development of fluorine bearing products with a background of over 40 years experience as a major producer of Hydrofluoric Acid.

If required, you are invited to draw on the knowledge and experience of our staff of technical specialists on fluorides. Broadly, we offer you the benefit of our accumulated experiences in engineering problems involving corrosion, safe handling and storage facilities.

WRITE *for Harshaw's 40-page Book on Hydrofluoric Acid Anhydrous. It provides helpful data for you if you now use HF or are considering its use.*

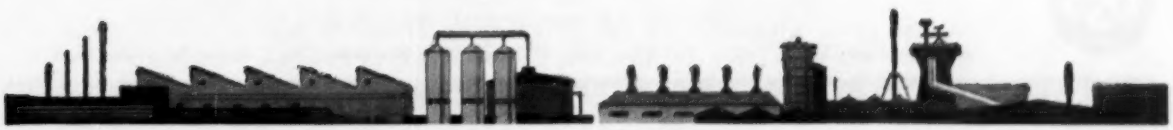
THE HARSHAW CHEMICAL CO.

1945 East 97th Street • Cleveland 6, Ohio

Chicago • Cincinnati • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Pittsburgh

Here is an additional group of production-controlled, high-quality fluorides:

Ammonium Bifluoride
Ammonium Fluoborate
Antimony Trifluoride Sublimed
Barium Fluoride
Bismuth Fluoride
Boron Trifluoride
Boron Trifluoride Complexes
Chromium Fluoride
Copper Fluoborate
Fluoboric Acid
Fluorine Cells
Fluorinating Agents
Frosting Mixtures
Hydrofluoric Acid Anhydrous
Hydrofluoric Acid Aqueous
Hydrofluosilicic Acid
Lead Fluoborate
Metallic Fluoborates
Potassium Bifluoride
Potassium Chromium Fluoride
Potassium Fluoborate
Potassium Fluoride
Potassium Titanium Fluoride
Silico Fluorides
Sodium Fluoborate
Tin Fluoborate
Zinc Fluoborate
Zinc Fluoride



USS Steel Pails

- Available in 3- to 6½-gallon capacities
- With tight heads or lug covers
- Wide variety of pouring spouts and openings
- Baked enamel finishes in any color combination
- Lithographed heads or shells as required

We also have steel drums of 15- to 55-gallon capacities which can be furnished painted, decorated, hot dipped galvanized, tinned or made of stainless steel.

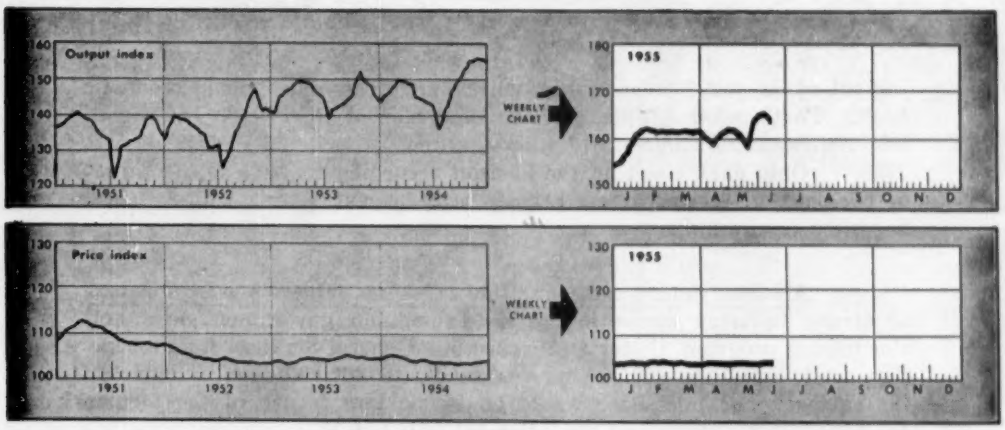
"It's Better to Ship in Steel"

A USS STEEL CONTAINER FOR EVERY INDUSTRIAL NEED!

UNITED STATES STEEL PRODUCTS
DIVISION
UNITED STATES STEEL CORPORATION
DEPT. 375, 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.
Los Angeles and Alameda, Calif. • Port Arthur, Texas • Chicago, Ill. • New Orleans, La. • Sharon, Pa. • Camden, N. J.

UNITED STATES STEEL

MARKETS . . . . . .



WEEKLY BUSINESS INDICATORS	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947-49=100)	162.1	162.9	143.5
CHEMICAL WEEK Wholesale Price Index (1947=100)	104.1	104.2	104.2
Stock Price of 11 Chemical Companies (Standard & Poor's Corp.)	466.8	445.3	313.1

MONTHLY INDICATORS—Foreign Trade (Million Dollars)	Exports			Imports		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Ago
Chemicals, total	$99.3	$93.3	$103.2	$22.4	$27.8	$26.8
Coal-tar products	6.0	6.3	8.8	3.5	3.5	3.3
Industrial chemicals	13.1	14.2	14.1	5.7	6.4	5.3

MARKET LETTER

State of the domestic sulfur market is attracting attention this week. While demand for most end uses remains fairly firm at the moment, a few observers are concerned about the future. Nub of the still nebulous pessimism centers on the impact Mexican material will likely have on U.S. markets.

Two south-of-the-border mines are already in operation, and a third, reportedly, will be producing in the fall. Hence, a problem that has been confronting Mexican sellers—that of not having enough sulfur on hand to fill orders promptly—is rapidly being licked as stocks build up.

To date, very little Mexican sulfur has come into the U.S.—certainly not enough to threaten existing price structures. But the situation by the end of the year may have an entirely different tint.

•

Sulfuric acid, too, is evoking mixed reactions. Sales in some area are being buffeted by local conditions (e.g., passing of the peak fertilizer buying season; continuing strikes in the Florida phosphate industry). And synthetic-detergent makers are expected to ease up on their sulfuric take.

On the other hand, the sustained high demand for steel bodes well for a continued hefty use of the acid.

Good amounts are also moving into paint pigments, chemicals and rayon.

•

That textiles in general are—and will be—doing better was reaffirmed last week in Washington. The industry is well on its way to work-

ing out of its post-Korean slump, will return to its once robust economic health. That's what J. Spencer Love, chairman of Burlington Industries, told the Senate Antimonopoly subcommittee.

Only dark cloud on the horizon according to Love is the threat of competition for world markets from resurgent German, Italian and Japanese textile mills.

•

Another Senate subcommittee studying minerals was apprised of strong industry opposition to a $157-million government lead and zinc buying program. Under a proposed bill, General Services Administration would purchase 200,000 tons of lead and 300,000 tons of zinc for the national stockpile. Rate would be 10,000 tons/month of the former (at 16¢/lb.); 15,000 tons of the latter (at 15½¢/lb.).

Warning sounded by the trade: the bill's too-high minimum prices would cause loss of both metals' markets to such substitute materials as aluminum, stainless steel, plastics.

•

The deep vinyl resin price cuts initiated by Bakelite early last week (and emulated by most other marketers by now) may have significant repercussions on related fields. For example, the reduction on polyvinyl chloride, aver some, will be a major stimulus to the comparatively new but rapidly expanding vinyl foam industry.

The vinyl types are similar in properties to isocyanates (polyurethanes), but until now the latter have managed to steal the foam spotlight.

A price slash—plus reportedly better flame- and oil-resistance, and better aging than latex products—would move vinyl foams into a more favorable position to buck not only the isocyanates, but also the latex foams, which are now holding a wide lead.

•

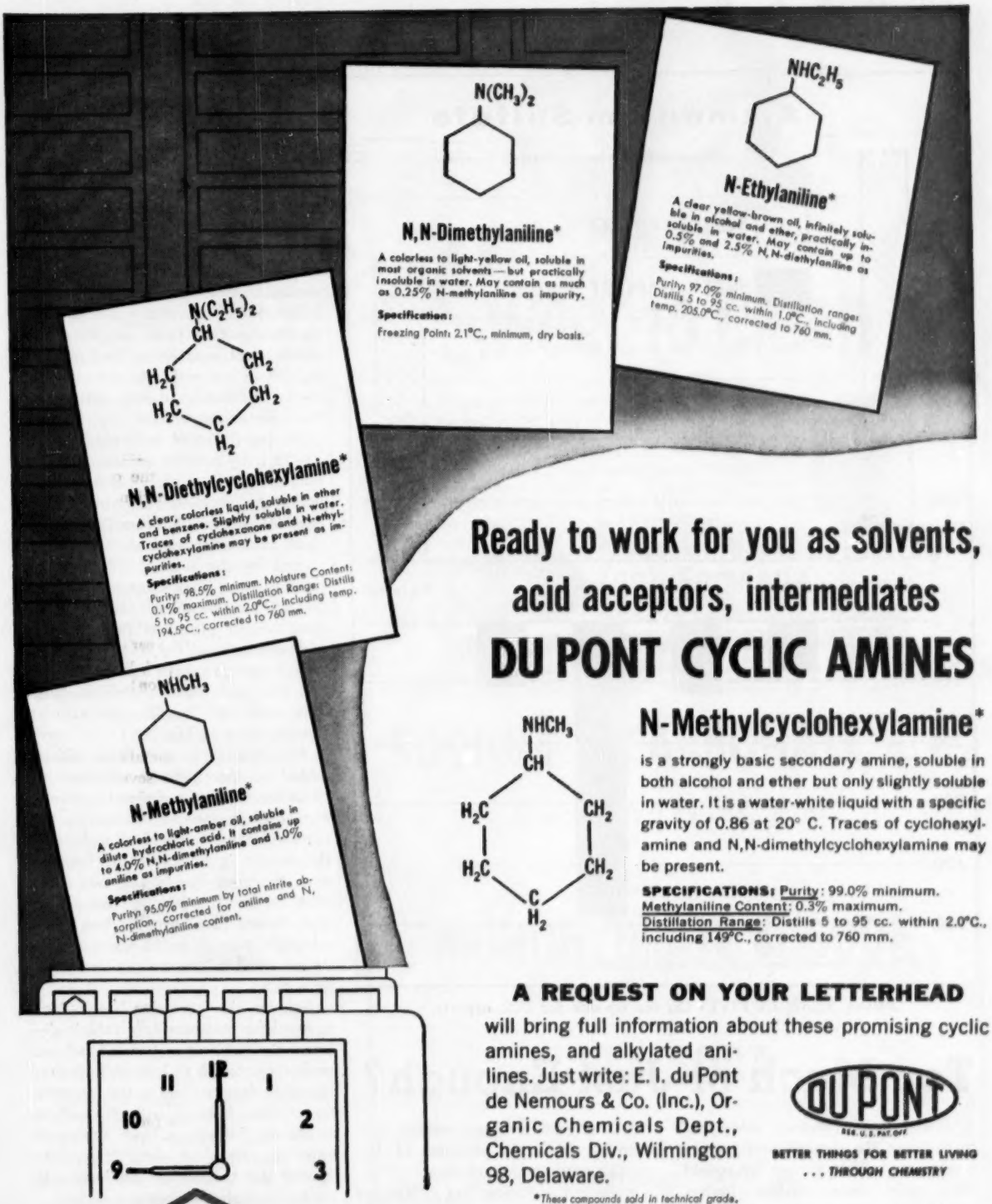
Manufacturing economies and a steady, continuing increase in sales volume are the chief reasons behind this week's lower tags on thiourea. Strong pressure from imported material may also have been a weighty factor, however, in the decision of just about all producers to follow American Cyanamid's downward move.

The cut (second since mid-August '53), is effective immediately, lops 2¢/lb. off the previous schedules. New prices: c.l. quantities, 36¢/lb.; l.c.l., 38¢. West Coast customers must tack on an additional 2¢/lb.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending July 1, 1955

	Change	New Price		Change	New Price
UP					
Gum rosin, c.l., N. Y.					
Water White (WW)	$0.2000	$0.0935	Grades B to N	0.1500	0.0920
Window Glass (WG)	0.2000	0.0925	Tallow, fancy, bleachable, tanks, dlvd.	$0.0012	$0.0737
Down					
Thiourea, tech., bags, t.l., f.o.b. N.J.	$0.0400	$0.3600	97-98% vinyl chloride copolymer of vinyl chloride-vinyl acetate, "non-solvent" type	0.0700	$0.3100

All prices per pound unless quantity is stated.


N(CH3)2
N,N-Dimethylaniline*
A colorless to light-yellow oil, soluble in most organic solvents—but practically insoluble in water. May contain as much as 0.25% N-methylaniline as impurity.
Specification:
Freezing Point: 2.1°C., minimum, dry basis.
NHC2H5
N-Ethylaniline*
A clear yellow-brown oil, infinitely soluble in alcohol and ether, practically insoluble in water. May contain up to 0.5% and 2.5% N,N-diethylaniline as impurities.
Specifications:
Purity: 97.0% minimum. Distillation range: Distills 5 to 95 cc. within 1.0°C., including temp. 205.0°C., corrected to 760 mm.
N(C2H5)2
N,N-Diethylcyclohexylamine*
A clear, colorless liquid, soluble in ether and benzene. Slightly soluble in water. Traces of cyclohexanone and N-ethylcyclohexylamine may be present as impurities.
Specifications:
Purity: 98.5% minimum. Moisture Content: 0.1% maximum. Distillation Range: Distills 5 to 95 cc. within 2.0°C., including temp. 194.5°C., corrected to 760 mm.
NHCH3
N-Methylaniline*
A colorless to light-amber oil, soluble in dilute hydrochloric acid. It contains up to 4.0% N,N-dimethylaniline and 1.0% aniline as impurities.
Specifications:
Purity: 95.0% minimum by total nitrite absorption, corrected for aniline and N,N-dimethylaniline content.

Ready to work for you as solvents, acid acceptors, intermediates

DU PONT CYCLIC AMINES

N-Methylcyclohexylamine*

is a strongly basic secondary amine, soluble in both alcohol and ether but only slightly soluble in water. It is a water-white liquid with a specific gravity of 0.86 at 20° C. Traces of cyclohexylamine and N,N-dimethylcyclohexylamine may be present.

SPECIFICATIONS: Purity: 99.0% minimum. Methylaniline Content: 0.3% maximum. Distillation Range: Distills 5 to 95 cc. within 2.0°C., including 149°C., corrected to 760 mm.

A REQUEST ON YOUR LETTERHEAD

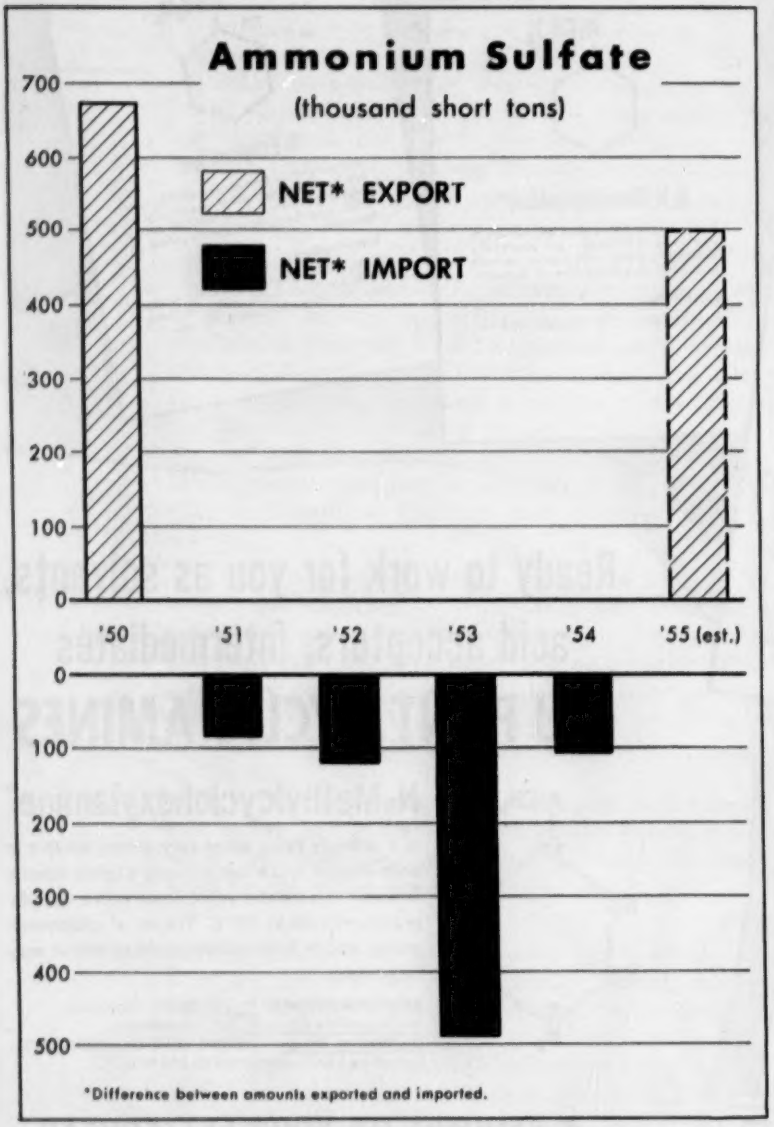
will bring full information about these promising cyclic amines, and alkylated anilines. Just write: E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Chemicals Div., Wilmington 98, Delaware.

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

*These compounds sold in technical grade.

ORGANIC CHEMICALS DEPARTMENT



FIRST YEAR IN FIVE: On the up-side for U.S. exports.

Too Much or Just Enough?

A casual trade follower, attempting to evaluate the current—and future—ammonium sulfate picture by considering only some obvious factors, would arrive at a very wrong conclusion—that ammonium sulfate, by the end of the year, could wind up in critical supply.

Some error-inducing premises:

- Additional U.S. synthetic ammonium sulfate facilities now, or soon to be, in production.
- High rate of steel output contributing to larger supplies of by-product ammonium sulfate.
- Recent posting of "bargain prices" on coke-oven sulfate.
- The heightened popularity of (and concurrently increasing competition from) other forms of fertilizer.

There are other reasons, too, why ammonium sulfate supply gives the impression it will soar over demand. There's apparently enough more to be made to foster predictions of record-breaking exports. This year, for the first time since 1950, U.S. makers are expected to ship to foreign users far more material than is likely to come in—one estimate, at least a 500,000-ton excess of exports over imports (*see chart*).

There's no gainsaying the fact, of course, that reasons behind the less optimistic view have had, in the past, a decided effect on the over-all ammonium sulfate situation. Take domestic steel production. Tied in inextricably as it is with coke-oven sulfate, steel's vacillation usually determines the sulfate's output rate.

During the steel strike-ridden year (1952), by-product sulfate production skidded a near-100,000 tons under the previous year's more than 898,000 tons (*see table, p. 74, Ammonium Sulfate Production*).

And by the end of '55, the by-product figure may shoot to well over 900,000 tons because of today's racing steel turnout. (The metal's output, on a steady uptrend for several months, moved up to a rate of almost 120 million tons/year during April; compare that with the 78-million-ton rate at the low point in July '54.)

The step-up in coke-oven sulfate, added to the material expected to come from recent additional synthetic capacity,* is causing concern in the marketplace. Some feel, though, that this worry is unwarranted. Reason: over the past few years, non-coke-oven sulfate production has ebbed and flowed, has usually been just adequate enough to fill the void between total sulfate output and consumption.

Despite the pendulumlike swings in synthetic statistics (*see table*), demand for fertilizer materials has been profitable enough to lure an imposing list of producers. Only in the last year or so have farmers' calls for sulfate fallen in frequency, but the new entrants, aver some observers, points up the fact that sulfate production is no money-losing proposition.

The ability of synthetic makers to literally turn the sulfate spigots on or off and produce, in many instances,

* Includes that of American Cyanamid, Union Oil, Filtrol Corp., plus such newer facilities as those of Smith-Douglass's San Jacinto Chemical Division, and of Standard Oil (Calif.), which will include sulfate in the list of ammonia products to be made at its new Richmond, Calif. plant.

nitrogen materials other than ammonium sulfate, bolsters the reasoning, too, that '55's level will scarcely hit 800,000 tons (more than 128,000 tons less than last year's), thus contribute to any necessary sulfate market-balancing.

Up, Down, Up . . .: Perhaps the most dramatic drop in synthetic ammonium sulfate production occurred during the Korean period. In 1951 only about 622,000 tons were produced, almost 516,000 under '50's 1,138,000 tons. One likely similarity to the current sulfate situation is that producers could again cut back as they did then when need fell off.

There were several causes for the '51 rein-tightening in synthetic, and the increase in by-product ammonium sulfate turnout. The hardest pull came from the sudden cessation of government purchases for foreign aid. Prior to 1950 the Army encouraged production for its Fertilizer Export Program; bought domestic sulfate (chiefly synthetic), for shipment overseas, particularly to Germany, Japan and Korea. Aid programs for the first two ended in '51, and were interrupted in the Far East by the Korean War.

On the home front synthetic production suffered other blows. National Production Authority, in an effort to conserve then-tight sulfuric acid, sliced sales to synthetic sulfate makers, in favor of coke-oven producers. Without sulfuric, ammonia from the latter's necessary coking operations would have had to be vented, lost.

Price cuts on coke-oven sulfate also added pressure for the synthetic cutback of several months in '51. (Low by-product price often edges synthetic out of some markets.)

Import competition, mostly from resurgent European industries, though, was the cause of synthetic's drop in '53. During that year, over 484,000 tons of such foreign material competed vigorously for U.S. buyers. The influx, too, sparked rough competition to domestic by-product sulfate, resulted in not a few price slashes, and other concessions.

Buy Now and Save: Recently posted schedules for coke-oven sulfate —with producers offering as much as $3/ton off the base price ($42/ton) for early shipment—is regarded in some market circles as another harbinger of a year-end sulfate surplus.

The price concessions now being

Sweet to Clean

Removable heads and entirely seamless interiors mean that Hackney bilged barrels "come clean" in a hurry—prevent product contamination—cut your cleaning costs. Available with single bolt, or quick-acting Toggle-tite closure. 30-and 50-gallon sizes in aluminum, or in painted, tinned, galvanized or terne coated steel. Send for the new Hackney Drum and Barrel Catalog.

Hackney
MILWAUKEE

Pressed Steel Tank Company
Manufacturer of Hackney Products
1448 So. 66th Street, Milwaukee 14, Wisconsin

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

SODIUM BICARBONATE, U.S.P.
Specialized Grain Sizes
•
MONOHYDRATE of SODA
•
SAL SODA
•
Technical Service
CHURCH & DWIGHT CO., Inc.
70 Pine Street New York 5, N. Y.
Phone Digby 4-2181

made by most major steel companies, point out marketers, is nothing new; such discounts were common prior to World War II, before the widespread realization by farmers that fertilizers could increase yields on less acreage. With increasing amounts of nitrogen for fertilizers coming into the market, however, the same problem that existed a decade or so ago is now confronting sulfate sellers: how to combat the tendency of ultimate consumers to concentrate their purchases in only a few months of the year.

A graphic example of this buying pattern are these recent inventory fluctuations: as of April 30, stocks in the hands of producers totaled nearly 165,000 tons against not quite 116,000 at the end of March. Significantly, stocks at the end of April last year amounted to only about 31,500 tons: a clear reason for today's bargain sulfate tags.

But if marketers' aims are fulfilled, ammonium sulfate movement will be spread out over more of the fertilizer year, whittle, by year's end, the excessive stocks that have accumulated in some areas.

Consumption during 1955, though, is expected to be slightly less than it was last year. In this, at least, those concerned over sulfate's outlook may have a point for pessimism. For there are some fertilizer technique changes under way that could affect ammonium sulfate business.

Perhaps the most potent blow will come from the trend, in many sections of the country, toward the use of high-analysis and granulated mixes. Many of the newer fertilizer processes can, and do, bypass the hitherto traditionally used sulfate, utilize cheaper forms of nitrogen (e.g., ammonium nitrate, solutions, and anhydrous ammonia).

On the other hand, the swing toward higher nitrogen-containing mixes could actually increase ammonium sulfate consumption. Here's how: when ammonium nitrate is used to raise the nitrogen content (in proportion to potash and phosphate), trouble with the latter develops beyond a 6-7% nitrogen increase; but ammonium sulfate is moving in where N content hikes above that level are required for higher-analysis mixes.

Diammonium phosphate, stirring up much controversy of late, may one day have a telling impact on ammonium sulfate, but the time isn't in the near future. Making the phosphate could offer, to coke-oven producers, an outlet for ammonia (collected in phosphoric acid), allow production of high-analysis material containing two essential elements.

Despite diammonium phosphate manufacture by TVA—now ordered by Congress to cut back to 5,000 tons this year—and by Colorado Iron & Fuel, Bennett Chemical and Best Fertilizer (and trial runs, using by-product ammonia, by Kaiser Steel, Ford Motor, and also, reportedly, by Inland Steel, U.S. Steel, and Wheeling), consensus is that the material will not become a significant ammonia-siphoner this year or next.

Too, a few hard-nut marketing problems attendant to direct sale to the farmer, are checking enthusiasm of some potential producers.

Ammonium sulfate may have more difficulty bucking the direct-application field; but even here consumption is inching up. During the last crop year, some 537,000 tons of sulfate as such was used. Compare that with the 235,000 tons consumed in direct application as recently as '49-'50.

Sulfate Sum-up: Thus, when all the facts—and probabilities—are considered, it appears fairly certain ammonium sulfate's short-term future is brighter than some believe possible.

Supply in '55, and perhaps in '56, may not be excessive because of several factors, including: the step-up in exports; the likelihood that some synthetic ammonium sulfate makers will switch to other forms of nitrogen.

All in all, it adds up to a not-too-dark ammonium sulfate picture.

AMMONIUM SULFATE PRODUCTION

(thousands of short tons)

	Synthetic	By-product
1950	1,137.7	831.0
1951	622.1	898.3
1952	812.8	802.4
1953	576.2	946.1
1954	928.4	822.9
1955 (est.)	800.0	923.0

Less Bounce

No surprise is the news that last year's elastomer production has relaxed, but how much of a snap-back it was is now revealed in a U.S. Tariff Commission report.

This backward trend in synthetic rubber had its inevitable effects on rubber-processing chemicals, too—particularly accelerators, anti-oxidants, and peptizers.

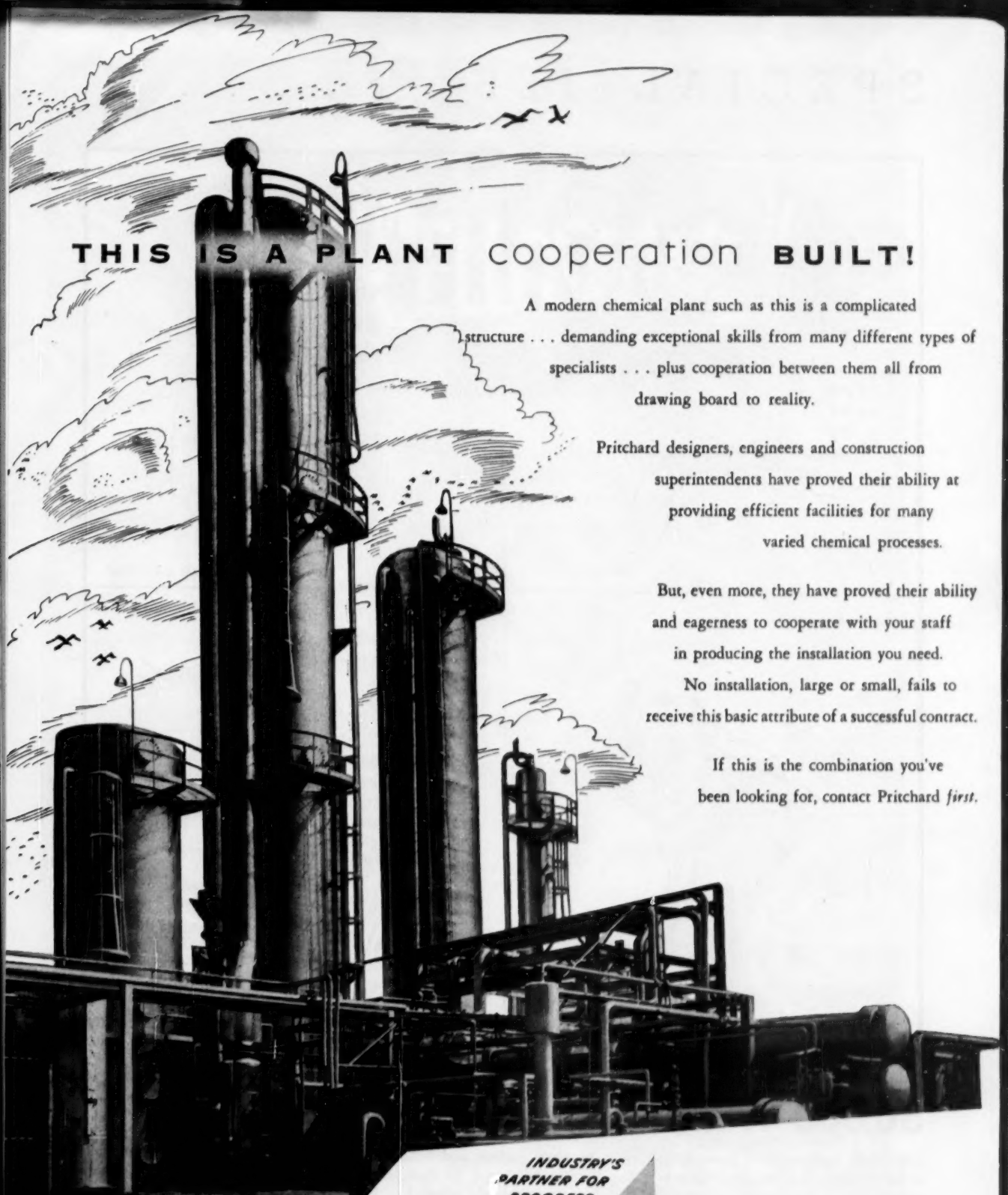
Total production of all elastomers in the U.S. (by both government and privately owned plants) dropped from 1,958 million lbs. in 1953 to 1,435 million lbs. in 1954, a decrease of 27%.

Cyclic elastomers, preponderantly polybutadiene-styrene (GR-S or Buna-S) produced in government plants slipped to 973 million lbs.—a full 31% under the previous year's output.

Acyclic elastomers (neoprene, butyl, silicone, isobutylene, vinyl, and others) remained livelier, percentage-wise, than the cyclics, dropping 15% from 543 million lbs. in '53 to 462 million lbs. in '54. Neoprene racked up almost a third of the total and was followed by butyl and vinyl elastomers (155, 130 and 105 million lbs., respectively).

Concomitantly, the decline in production of rubber-processing chemicals—from 145 million to 129 million lbs.—was 11%.

Finally, acylic rubber-processing chemicals, mostly accelerators and peptizers, followed the general pattern by cutting its relatively smaller poundage down to 19 million lbs. last year from the preceding year's 23-million-lb. total.



THIS IS A PLANT cooperation BUILT!

A modern chemical plant such as this is a complicated structure . . . demanding exceptional skills from many different types of specialists . . . plus cooperation between them all from drawing board to reality.

Pritchard designers, engineers and construction superintendents have proved their ability at providing efficient facilities for many varied chemical processes.

But, even more, they have proved their ability and eagerness to cooperate with your staff in producing the installation you need. No installation, large or small, fails to receive this basic attribute of a successful contract.

If this is the combination you've been looking for, contact Pritchard *first*.

INDUSTRY'S PARTNER FOR PROGRESS

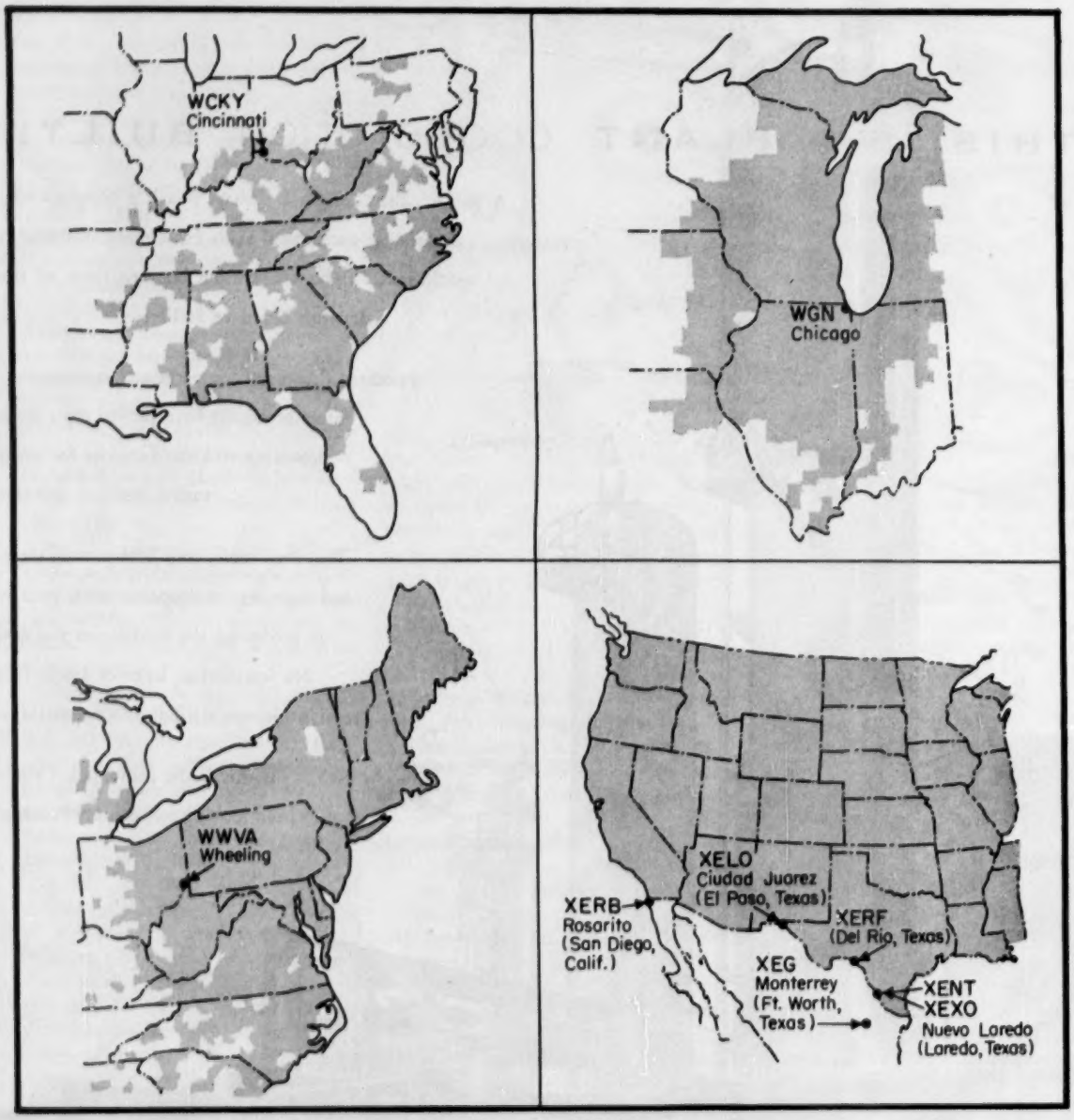
SERVING THE GAS, POWER, PETROLEUM AND CHEMICAL INDUSTRIES

BOSTON, BUFFALO CHICAGO, HOUSTON NEW YORK PITTSBURGH ST. LOUIS TULSA

J.F. Pritchard & Co.

ENGINEERS • CONSTRUCTORS

Dept. 469, 4625 Roanoke Parkway, Kansas City 12, Mo.



NIGHTTIME AUDIENCES: The "Big 3" and the "Xs" fill the night and the country, as . . .

50,000-Watt Pitchmen Sell Specialties

Late night radio addicts, particularly in the Midwest, will this week be subjected to 3-to-4-minute-long pitches that wind up something like this: "Send no money—just a postcard will do—to 'Bug Man'—that's B-U-G, M-A-N, Bug Man, Del Rio, Tex. When the mailman brings your Bug-Kill Bomb you just give him $2, plus a few cents to cover postage and handling. Use the bug-kill bomb 10 days, and if you aren't completely satisfied . . ."

Separated by occasional phonograph records of hillbilly music, these pitches follow one another through the night, drive many listeners to fury, but drive many others to pencil, postcard, and purchase of specialties. If the commercial seems a little longer and more eager than usual, it's probably because the station is working on a "per-inquiry" (p.i.) plan—it gets paid, on a commission basis, only for orders produced.

As radio entertainment, p.i. shows certainly aren't "egghead," but as a sales force, they are worth looking in-

here's how you can use...

butyl "CELLOSOLVE"

(Ethylene Glycol Monobutyl Ether)

SOLVENT IN

- **Nitrocellulose lacquers:** to improve blush resistance and promote good flow out and gloss.
- **Baking enamels:** as a viscosity-reducing agent.
- **Varnishes:** as an excellent thinner.

MUTUAL SOLVENT IN

- **Industrial cleaners.**
- **Dry-cleaning soaps.**
- **Textile and metal-cutting oils.**

INTERMEDIATE FOR

- **Low-volatile herbicides.**
- **Vinyl plasticizers.**

IN HYDRAULIC FLUIDS

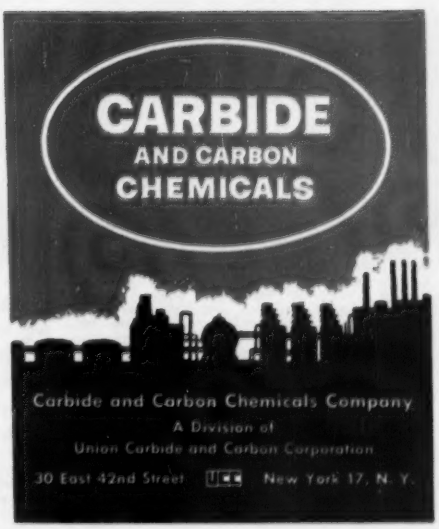
- **Important brake fluid diluent.**

Whatever your solvent needs may be, call CARBIDE—source of butyl CELLOSOLVE and over 75 other commercial solvents including ketones, esters, alcohols, glycol-ethers, and chlorinated compounds. Prompt shipments are made from CARBIDE plants, warehouses, and bulk storage facilities in industrial areas across the nation.

for further information

For additional information and prices, call or write the nearest CARBIDE *office. Ask for the technical bulletin on butyl* CELLOSOLVE *(F-7862) or for family books on groups of compounds mentioned above. In Canada: Carbide Chemicals Sales Company, Division of Union Carbide Canada Limited, Toronto.*

"Cellosolve" is the registered trade-mark for a family of industrial solvents made by Union Carbide.



to. A good item on a good station can pull as many as 2,000 orders a day (the record is 30,000).

Radio Introductions: d-Con, a Chicago specialty maker, has built a $10-million/year business of products launched by p.i.* By introducing products this way, the company figures, it can work out promotion problems before going into retail outlets, get a lot of advertising to the public at a minimum outlay.

Visions of sales like this have many manufacturers knocking on the p.i. door—but usually nobody answers. Cold offers are generally wastebasketed by radio stations. Before they get interested they have to know who you are and how well your product sells. The few who take you up are probably poor-pulling stations—business is bad and they are willing to gamble on anything. The fact of the matter is that most people who want to go into p.i. just don't make it.

A lot of them can't even get started. It is estimated that 250-300 stations in the U.S. accept p.i. deals at some time or another, but only a handful really do a job. The three biggest (almost entirely p.i.) are usually ranked (by pulling power): 1st, WCKY, Cincinnati, O.; 2nd, WGN, Chicago; and 3rd, WWVA, Wheeling, W. Va.

Borderline Stations: Del Rio's "Bug Man" (hypothetical but typical—it's important to make addresses easy to remember) is using one of the "X" stations (so-called because their call letters all start with "X"). These are in Mexico, mostly situated along the Rio Grande or in Baja California, just far enough south of the border (often a matter of yards) to keep out of the reach of the Federal Communications Commission (some FCC wet blankets: U.S. stations are restricted to 50,000 watts, plausible advertising claims, and sponsors that can pass muster).‡

All of these stations get more p.i. offers than they can handle and are particular about whom they take on. To make a deal you have to sell a station representative like John Hopkinson, of Dwight and Associates (Chicago) on the idea (he controls p.i. on WCKY, WGN, WWVA, XERF, and many smaller broadcasters, usually by buying blocks of time). Generally he isn't too impressed unless you've bought time, test-marketed, and shown good returns.

The best way to begin is by working through an experienced mail-order advertising agency. It will be able to advise you on all arrangements, write copy for you, deal with Hopkinson, and arrange your test pitch.

Entrance Exam: The test will cost $300-400, and require, usually, no more than 500 units of merchandise (in fact, some tests are conducted with no merchandise at all—if response is poor, the money is simply refunded.

Test results and a sample of the product are presented to Hopkinson.** If he likes it, he will agree to give it a try on one or more of his stations. But unless the money soon rushes in, the plugs will cease.

You'll need capital to make a p.i. deal. Most radio mail-order business is C.O.D. (it brings more returns). You won't get any money until after the merchandise is delivered, but you have to pay the commission when the station turns the order over to you.

Minimum Profit: The commission is high. On most items it runs 40-50%, but on chemicals, where higher markups are possible, it runs all the way up to 100% (sometimes agreed to by manufacturers that look for profit in reorders or want a good mailing list). In general, for p.i. profits, you have to have an item that can be marked up 3-4 times, yet sell for less than $4.

Also, in some cases you will be required to deposit up to $5,000 in a bank to cover money-back guarantee.

It's certain that on a good item, your cost-per-order is much higher with p.i. than it would be if you bought time. Stations experienced at getting results are also experienced in estimating how big a commission the specialty maker can bear, leaving him a minimum profit.

But one firm—Pope Chemical Co. (Chicago) (auto polishing cloth, motor overhaul compound)—feels the high cost is compensated for by its being a fixed cost. In the mail-order business, where miscalculating costs can ruin you, the most unpredictable factor is the price of an order.

Stamp Money: Mail order is tricky; other costs can sneak up on you, too. Money has to be allowed for returns, C.O.D. refusals, postage, packaging and handling costs. Mailing expenses can be put on a fixed basis, too, by hiring a firm that specializes in it. Such a firm can also get packages out fast (it's important to mail within three days of receiving the order).

As a matter of fact—and here's a sobering thought—98% of the people who go into mail order go broke.

Fluid Standards

Ready to be signed by Gov. Goodwin Knight last week was a California bill setting up minimum standards for brake fluids. The bill, to start Jan. 1, 1956, makes it illegal to sell or distribute any brake fluid without first applying to the state department of agriculture for registration—i.e., written authorization permitting the sale.

Fluids must meet minimum standards for SAE heavy-duty fluids, and containers must be labeled as "Brake Fluid," with maker, packer, seller or distributor, and statement of quantity in liquid measure.

Registration costs $100, must be renewed annually for $50. This fee had been the main objection of the makers of the fluids. Several similar bills are before other state legislatures, and though the control they provide is regarded as sound, the charges are deemed excessive by most in the industry.

•

Prefrosted Cake: John Andrews and Thomas Freer have worked out a novel recipe for a self-icing cake batter (U.S. Pat. 2,710,809, assigned to General Mills). The batter contains candy particles heavier than the rest of the batter—when the cake is baked, they apparently settle to the bottom of the pan, where they fuse to produce the icing.

•

Skeeter Chaser: Bridgeport Brass Co. (Bridgeport, Conn.) is now selling an aerosol-packed insect repellent. Tagged Ban-X, the new specialty is said to be odorless, greaseless and harm-

*The technique was successfully used to launch M-O-Lene, a cleaner for textiles and fabrics; Sone, a facial blemish cover; Junex, a reducing plan; and Fly-Con, an insecticide. The company now has five specialties in the p.i. test stage: Rocket, a spark improver for automobiles; Propel, a motor oil additive; Corolite, an auto polish; Pellin, a fly killer; and Robot Gardener, a combination fertilizer, herbicide, and insecticide.

‡At least two of the border group (XELO, Ciudad Juarez, and XEG, Monterrey) have 150,000 watts, are practically inescapable in the U. S. These two along with XERF, Villa Acuna (50,000 watts) are clear-channel stations by a 1940 treaty. None of them is rigidly prudish about sponsors or product claims. Once tremendous sellers, the "X's" (which are largely backed, by the way, with U. S. money) seem to be slipping. Too much questionable merchandise has lost listeners, confidence, p.i. men in the U. S. believe.

**New York and California have so often been sources of good samples followed by poor merchandise that these areas have bad names in p.i. books, are almost blackballed.

PETROCHEMICALS...
To supply your needs—
PRESENT and FUTURE
At the Petro plant in Tuscola, Illinois an endless stream of natural gas is being separated into ethane, propane, butane, and natural gasoline. The ethane is converted to ethylene, which in turn is converted to ethyl chloride, ethyl alcohol, ether, and polyethylene. U.S.I. ammonia and sulfuric acid plants next door supply and receive raw materials.
If you need one of these chemicals or one of the many others that Petro could manufacture, why not add this plant to your facilities. Our engineers will be glad to discuss your long-term bulk requirements for chemicals from Petro.

NATIONAL PETRO-CHEMICALS

CORPORATION

A joint enterprise of National Distillers Products Corporation and Panhandle Eastern Pipeline Company

99 PARK AVENUE, NEW YORK 16, N. Y.

less, applicable to skin or clothes. Mosquitoes, gnats, flies, ticks, sand fleas, chiggers and other pests are repelled by the compound.

•

Rugged Coat: For use under a wide variety of corrosive and abrasive conditions, Saran Protective Coating Co. (Ferndale, Mich.) is now selling its brand of ready-to-apply neoprene paint.

•

Easy Journey: Herman Chinn, of the USAF School of Aviation Medicine, last week reported on a number of motion-sickness remedies the Air Force had been experimenting with. His conclusion: there are several medicines now available that can effectively prevent discomforts of travel sickness.

Among the products tested by his group and found to be effective preventives were such specialties as Dramamine, Benadryl, Marezine, Phenergan, Bonamine. Although these reduced the chances of persons becoming travel-sick, Chinn pointed out that none can help a person once he's sick, suggested this would be a helpful branch of medical research.

•

'Fair Trade' Jolt: An Indiana Superior Court last week ruled out "fair trade" in that state by declaring the state's 18-year-old law unconstitutional. Judge Hezzie P. Pike made the ruling, terming the practice "restraint of trade."

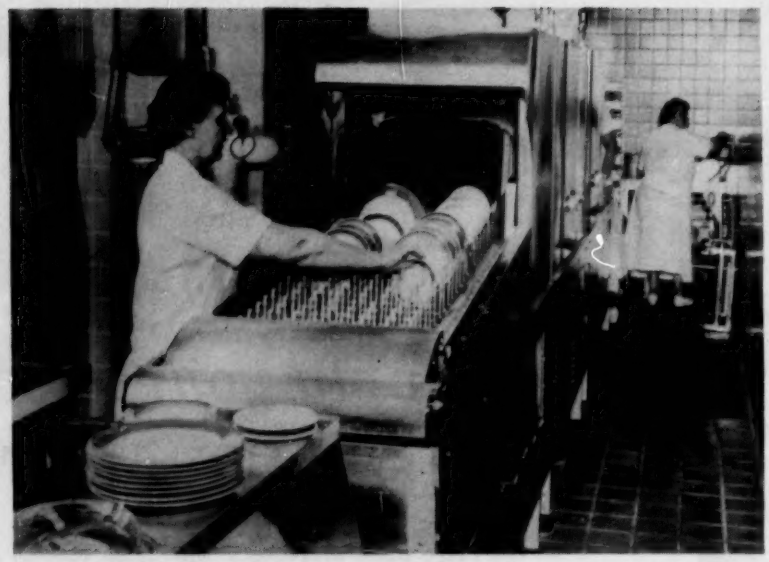
•

Slow Troll Special: Fishermen get a break in a new lubricant devised by Dow Chemical Co. Dowlube, as the synthetic is called, is designed for two-cycle engines, such as outboard motorboat engines, which operate at low, trolling speeds.

A nonpetroleum lubricant, it is said to burn completely, not foul spark plugs, or produce smoke. At present, it is being sold only in Florida, Michigan and Texas, through service stations and sports equipment stores.

•

Hot Wire Coater: Tagged simply 1267, a new wire enamel has been worked out by Westinghouse Research Laboratories. A modified polyester-type resin, incorporating about 20% silicone, it is said to be useful for electric motors that operate as high as 325 F (about 150 C) for periods as long as 10 years.



MECHANIZED WASHUP: In automatics, suds can be a handicap

No Place for Suds

"We're in a phase of the premium business," a leading soaper told CW recently, "that we never expected to be in. Selling automatic washing machines now has its 'Crackerjack' aspect —'with every washer you get a prize' —and our detergents are the prizes." Just what detergent it will be depends largely upon the efforts of two firms, Monsanto with its All, and Procter & Gamble with Tide. Their battle for the automatic washer market, a fight between a low-sudsing compound and a high-sudser, is familiar to most washer buyers by now.

That the heavy promotion for Tide in automatics goes on at all is indicative of the change in housewives' attitudes: No longer are suds her first criterion for judging wash products. Her acceptance of low-foaming compounds has created a rapidly swelling market for the nonionic detergents, principal ingredients in most "controlled suds" syndets.

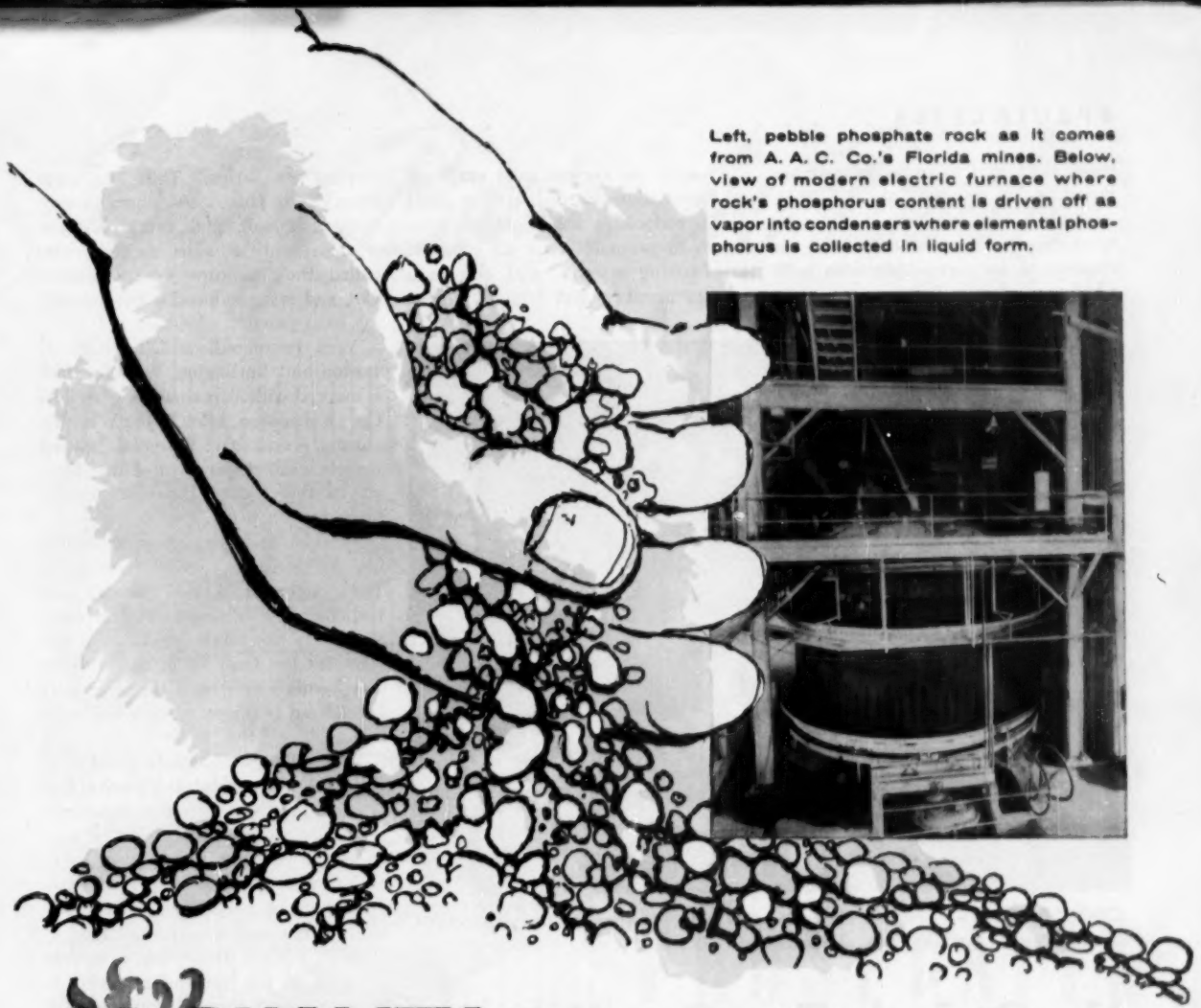
Discouraging Price Tag: The nonionics have been slow in reaching the volume of the anionics, however, for more than the reason of slight suds production—their cost has been high compared with anionics. Now, the major soapers all have low-foam syndets (Colgate has Ad; Lever, Vim; P&G, Dash), and the major suppliers of surface-active agents all are fighting for the business. One of the newest products in the field is Rohm & Haas's Triton CF-10 (introduced as experimental detergent CF-10, *CW, March 19, p. 111*).

The new compound has already found use in some of the low-sudsing clothes-washing compounds, but R&H is pushing it particularly for the automatic dishwashing syndets. Although automatic dishwashers have not yet reached the sales heights hoped for them (*CW, Sept. 18, 1954, p. 65*), there's no question but that appliance men regard them as a major area for sales growth.

It is Rohm & Haas's contention that Triton CF-10 can provide the high detersive effects of an organic agent without the harshness that characterizes many of the current dishwashing compounds. Many of these formulations are straight inorganics*—polyphosphates, water softeners, etc.—which do a good job, but which could be improved. A major problem in adding the organics is avoiding foam production. Even more than in clothes washers, an excess of foam can interfere with dishwasher action, which often depends on the jet-cleaning action of water spray.

R&H thinks that in its CF-10, it has the answer. The surfactant is a non-

* An obvious exception is Antara's Chat, a liquid dishwasher made with an anionic, alkyl amide sulfonate.



Left, pebble phosphate rock as it comes from A. A. C. Co.'s Florida mines. Below, view of modern electric furnace where rock's phosphorus content is driven off as vapor into condensers where elemental phosphorus is collected in liquid form.

AA QUALITY Elemental Phosphorus

99.9% pure... Electro-Thermally produced

Elemental Phosphorus cake

Whether used in its 99.9% pure elemental form or in the ever-widening range of phosphorus derivatives and compounds, AA QUALITY Elemental Phosphorus assures highest standards of quality and uniformity. *Quality* you can rely on, because of rigid control from mines to finished products. *Service* you can depend on, because of large-scale production and ample phosphate-rock reserves. Assured quality, security of supply, prompt service—sound reasons for using AA QUALITY Chemicals. Write for further information and samples.

"From our mines to your plant"

THE AMERICAN AGRICULTURAL CHEMICAL COMPANY

Chemical Division: 50 Church Street, New York 7, N. Y. • 30 plants and offices serving U. S., Canada, Cuba

THE AMERICAN AGRICULTURAL CHEMICAL COMPANY · AA QUALITY ·

REG U.S. PAT. OFF.

AA QUALITY PHOSPHORUS PRODUCTS

PHOSPHORUS AND PHOSPHORUS COMPOUNDS
Elemental Phosphorus (Yellow-White)
Phosphorus Red (Amorphous)
Phosphorus Pentasulphide • Sesquisulphide
Ferro Phosphorus (Iron Phosphide)

PHOSPHATES
Disodium Phosphate • Trisodium Phosphate
Dicalcium Phosphate • PHOS-FEED® BRAND

PHOSPHORIC ACID
85% N. F. Grade • 75% Pure Food Grade
50% Pure Food Grade
Agricultural and Other Grades

PHOSPHATE ROCK & FERTILIZERS
All grades Florida Pebble Phosphate Rock
Superphosphate
Complete Fertilizers

OTHER AA QUALITY PRODUCTS

FLUORIDES AND FLUOSILICATES
Sodium Fluoride • Ammonium Fluosilicate
Magnesium Fluosilicate
Potassium Fluosilicate
Sodium Fluosilicate • Zinc Fluosilicate
Fluosilicate Mixture
Ammonium Fluoborate
Aluminum Fluoride
Magnesium Fluoride

GELATIN
KEYSTONE® Gelatin: Edible, Photographic, Pharmaceutical, Technical

OTHER PRODUCTS
Animal Bone Charcoal
Bone Black Pigment (COSMIC® Blacks)
Keystone Ammonium Carbonate
Sulphuric Acid • Insecticides-Fungicides

ionic alkyl aryl ether, a light-amber liquid. It can be used (about 5-10%) in both liquid and dry (powder or spray-dried) formulations, and is claimed to be compatible with both alkaline syndets and soaps.

Despite the current sales emphasis on formulations for dishwashers, R&H isn't overlooking other outlets, continues to promote it for all types of low-foaming systems, and also as a wetting agent for wet-strength papers.

THE MILWAUKEE JOURNAL

COOPERATION: Essential's chemists team with Milwaukee's fire department in using Prev to quell a potential fire hazard.

No Order's Too Small

Many are the small specialty firms that feel they're too small to maintain new products research. The cost is high, the returns slow in coming, the risk sometimes more than the company can take.

Jim Wheeler, president of fast-rising Essential Chemical Co. (Milwaukee), is in complete agreement with firms of this persuasion. Developing new products for itself and other distributors is plenty costly. "We've spent more money on research than we could afford,*" he says seriously, "but we just wouldn't be in business if we hadn't."

That Essential is still very much in business is indicated by its recent acquisition of enlarged manufacturing facilities outside Milwaukee, at Fredonia, Wis. *(CW, May 19, p. 111).* It just moved in last month, already has production in full swing, and is this week transferring its office forces. (A small sales office will be maintained in Milwaukee.)

A pair of new products, fruits of research, have recently hit the market. April, low-suds syndet, was introduced a few months ago, and Trust, a detergent-disinfectant for diapers, is just now getting into major distribution.

These two new items, probably among the best-known of Essential's home specialties, represent only a small part of the firm's business. It is continuing its major interest in industrial cleaners and private-label packaging (about 25% of its production is for its own products, the rest is for custom labels). Essential doesn't want to lose its attitude that "no order is too small if we're asked to make something."

Still on the Books: Although Essential, under that name, has been in existence only since 1944, it traces its history back to 1898, even has some of its original customers still buying its soaps. The firm was founded by Hugo Schlesinger, a perfume salesman, and Bruno Kniffler, a man with a soap formula—who called their venture Vera Chemical Co., and first produced a sweet-smelling soap powder.

Vera prospered, added plants in Boston and Burlington, Ont. In 1928 it merged with Papermakers Chemical Co. (Kalamazoo, Mich.). Jim Wheeler, current president of Essential, headed the chemical department of that firm, stayed there when Hercules Powder took over in 1931.

Wheeler and a group of associates bought Hercules' soap division in 1944, gave it a new name, and launched into business on their own. Soap was the main product at the start; it's less than 5% of the business now, with synthetic detergents and specialized formulations now the main items.

Varied Output: Typical of some of the specialty compounds Essential has devised are Noilube, a replacement for the oils used in diecasting (it produces no smoke in molds) and Prev, an oil and gasoline dispersant that proved to be a real public relations help for Essential a year or so ago.

At that time, there was a serious oil spill on the Milwaukee river. A large area was covered with about 4 in. of oil. Faced with a serious fire hazard, and one thought almost impossible to dispose of, the city fire department dammed the oil with a log barrier, then called for Essential's help *(see cut)*. The firm provided its Prev, and with the help of pumps and outboard motors, emulsified the oil until it was no problem (Prev is said to hold oil in suspension at least 64 hours).

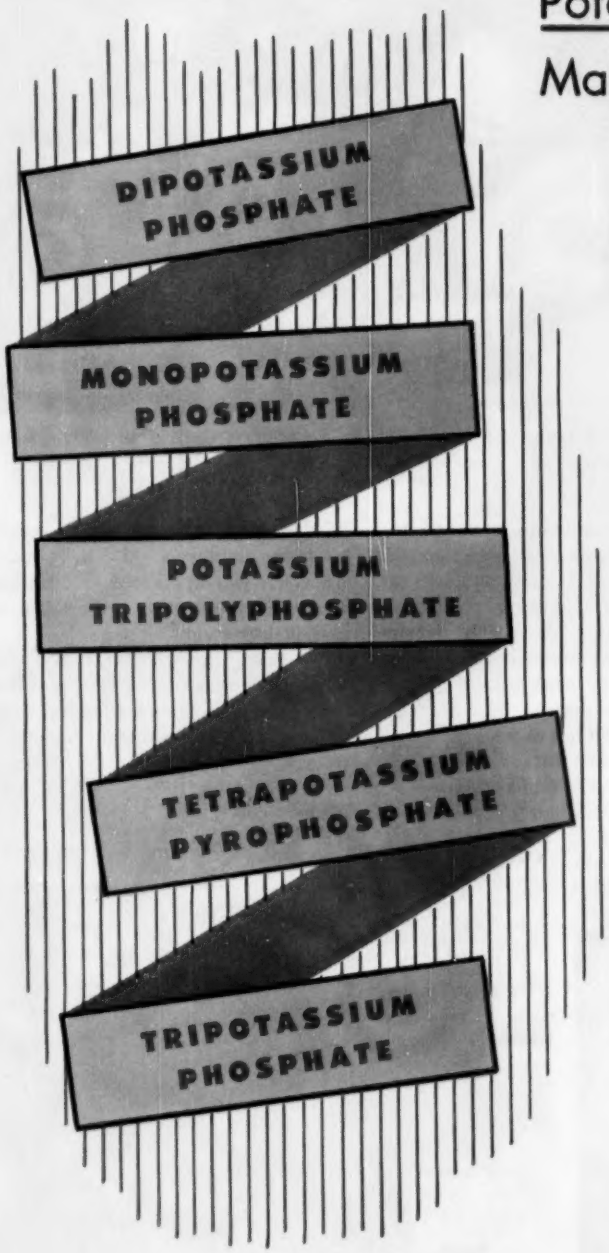
Other products include a compound for suspending Oildag (colloidal graphite in oil) in water. Under its own label, too, are such compounds as Soapthetic and Soaptergent, which are combination products of these two cleaners.

At its new plant, Essential will produce its own alkyl aryl sulfates and condensates, in addition to formulating the custom products it has worked out for its customers. The new plant is the third one the firm has moved to in the past three years; it's willing to settle down now for a while in everything but sales and product research.

* A small firm, Essential has disposed of some of its product lines in the past few years in order to help provide money for research.

Being Basic in Both

Potash and Phosphorus Makes



Westvaco® CHEMICALS
TRADE MARK

your most dependable source of

POTASSIUM PHOSPHATES

No other producer can serve you as widely or as well! Because — Westvaco is in the unique position of possessing its own dependable source of *all* the basic chemicals necessary for the manufacture of a highly-diversified line of potassium as well as sodium phosphates.

So remember . . . whatever your needs . . . you can minimize inventory, be sure of uniform quality and low delivered price when you specify WESTVACO phosphates.

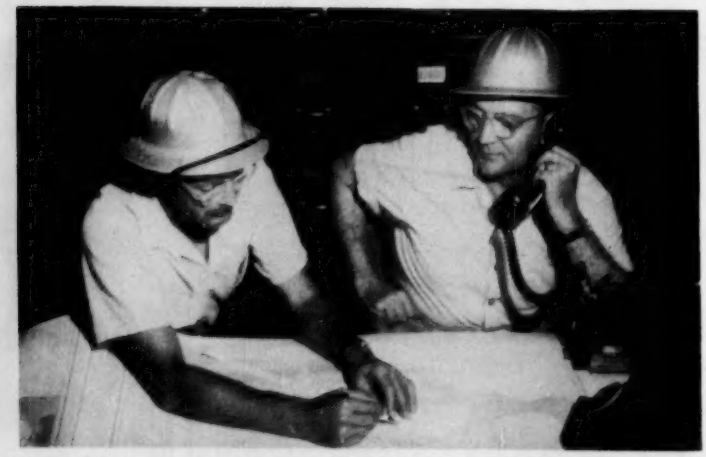
fmc
FOOD MACHINERY AND CHEMICAL CORPORATION

Westvaco Mineral Products Division
FOOD MACHINERY AND CHEMICAL CORPORATION
General Offices • 161 East 42nd Street, New York 17
® CHICAGO, ILLINOIS • CINCINNATI, OHIO • HOUSTON, TEXAS • NEWARK, CALIFORNIA

PRODUCTION.....

Hurricane Defense Takes

Planning . . .



1 ERNEST CARSON, head of Galveston Weather Bureau, and M. K. ("Andy") Andersen discuss warning system (left) while Tom Wilker, coordinator for plan, goes over a chart with Noah Welch, general foreman (right).

This week, although the hurricane season along the Gulf Coast is five weeks old, residents of Texas City haven't seen a storm that even faintly resembles a hurricane. But that isn't unusual for Texas City. The area has felt the full force of only two hurricanes, one in 1915 and one in 1943. And as hurricanes go, the one in 1943 was comparatively mild.

But old-timers are still talking about the fury of the 1915 gale. One of them, C. O. Amburn, a retired real estate and insurance man, decided to talk to industry about it. Last year, he made the rounds of plant management telling them the damage that had been wrought and asking them how they were set up to cope with a similar storm.

As a direct result of Amburn's visit, Texas City plants this year are secured against hurricane damage. Take the Carbide and Carbon plant pictured on these pages. A veteran (25 years) Carbide employee, M. K. (Andy) Andersen was appointed to establish a plan for precautions to be taken in case of hurricane.

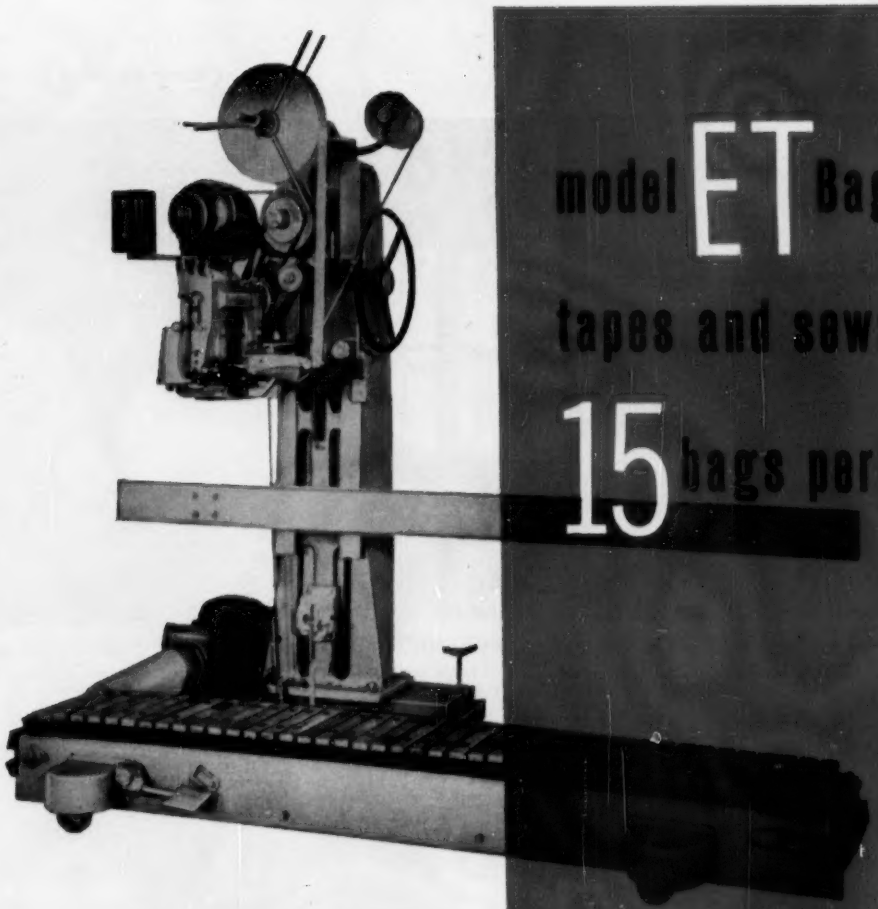
The whole program is closely tied in with the Galveston Weather Bureau, which will relay information concerning the whereabouts and path of any storm that looks as though it might cause trouble. With the highly refined techniques now em-

Communications . . .

2 MEMBERS of a radio club go over radio equipment that could be pressed into service should a hurricane strike the plant.

and Foresight . . .

3 IN CASE normal water supply fails, an aluminum tank car will be filled with fresh water and secured alongside hurricane headquarters.



model ET Bagpaker® tapes and sews 15 bags per minute

TAKE ADVANTAGE OF THESE 5 MODEL ET BAGPAKER FEATURES:

- One operator finishes 15 bags a minute when filled bags are delivered continuously to the conveyor
- Adjusts to bags from 25 to 100 lb. capacity
- Caster-mounted, the Model ET is easily moved to widely separated packaging stations
- Bag starts and stops sewing head when equipped with automatic sewing head control
- Automatic brake on Hoepner No. 150 Heavy Duty sewing unit prevents "coasting"

Here's the perfect teammate for your present filling and weighing equipment—the most efficient way to get better protection and faster packaging at the lowest possible cost.

Here's how the Model ET Bagpaker works: One operator receives bags from your weighing and filling machine. In four seconds or less the Bagpaker has applied creped "kraft" sealing tape over the bag end, sewn a reinforced "cushion stitch" through both tape and bag, and trimmed the tape. You can't beat that for efficiency and speed.

Booklet ET gives you complete details and dimensional drawings, shows you how perfectly Model ET fits into your existing filling set-up. There's no obligation—just write to: K-16

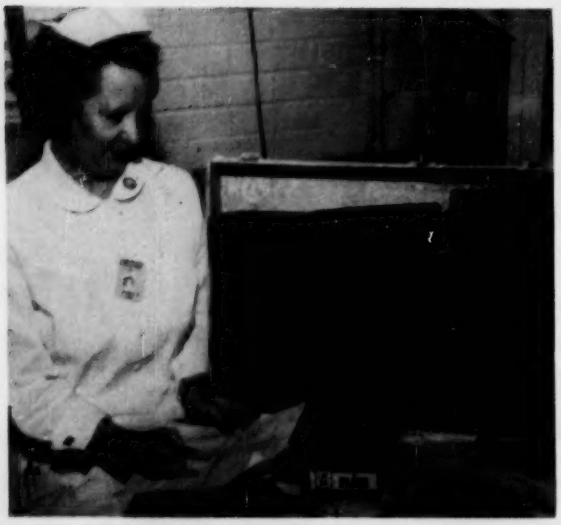
International Paper Company, Bagpak Division
220 E. 42 Street, New York 17

International Paper COMPANY

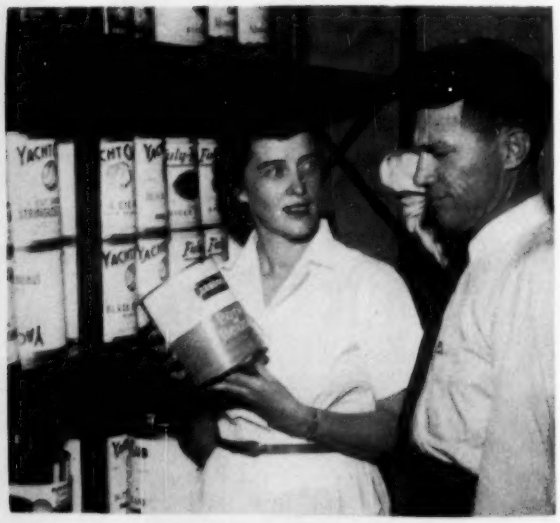
BAGPAK DIVISION

BRANCH OFFICES: Atlanta · Baltimore · Boston · Chicago · Cincinnati · Cleveland · Dallas · Denver · Des Moines · Detroit · Joplin · Kansas City, Kansas · Los Angeles Minneapolis · New Orleans · Philadelphia · Pittsburgh · St. Louis · San Francisco · IN CANADA: The Continental Paper Products, Ltd., Montreal, Ottawa, Toronto

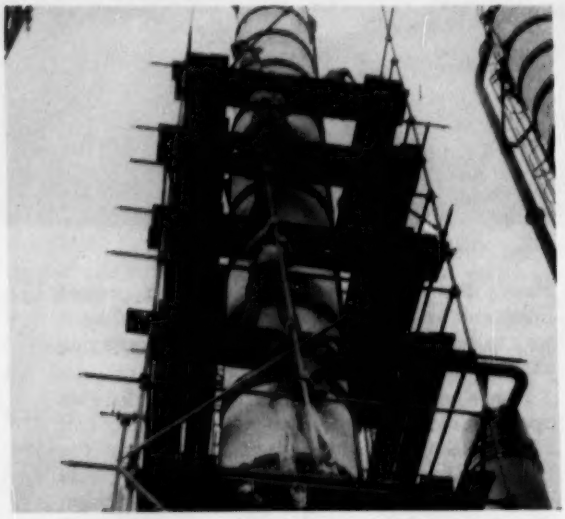
(Story starts on p. 84)



4 PLANT NURSES check out large medical kits that will be sent out to spots already designated as hurricane retreat areas.



5 BERENICE SEXAUR, cafeteria head, shows can of beans stocked for hurricane to plant committeeman (and former Navy man) George Juneman.



6 GOOD HOUSEKEEPING is an important part of hurricane program. Workers above remove scaffold from column as soon as they're through.

7 POLYETHYLENE SANDBAGS (which don't rot upon long storage) will be used at Texas City to batten the hatches during storm.

ployed in spotting hurricanes, usually such a storm would be detected several days before it hits the land. Defense preparations will start off slowly but will be quickened as the storm approaches.

When it's eight hours away, for instance, the plant will start to shut down. By the time it reaches a point four hours distant, it will be completely shut down.

A skeleton force of approximately 60 will be kept at the plant. Then, when the storm hits, the problem will be threefold: maintaining communications inside the plant as well as between the plant and the outside, keeping employees safe and protecting equipment.

For communications, sound-powered phones have been installed, ham operators will man a Carbide radio club's equipment, and teletype machines will receive information from the weather bureau and will keep company headquarters in New York posted on the entire operation.

All the permanent buildings and structures are built to stand up against hurricane winds. But the many small movable objects around a plant could become deadly projectiles in a strong wind. So the plant management put on an intensive campaign to stress the importance of good housekeeping. Thus, even if a hurricane never again hits the region, the plan is paying off in a better-kept—and consequently more efficient—plant.

Louisville Method

Louisville Dryer "Family" boosts production, cuts costs for chemical manufacturer

Dryer Types Installed in one Plant Since 1933

10 ft. x 100 ft. size
largest ever built!

Pilot Dryer
38 in. x 25 ft. size

Some years ago a large chemical company bought the smallest commercial Louisville Steam Tube Dryer as a pilot plant for a new product. Today this firm owns a whole "family" of Louisville Dryers, ranging from their original small pilot plant to the largest steam tube dryers ever built, Louisville's 10 ft. x 100 ft. rotary dryers.

Large or small, there's a *right* size dryer for your job. Louisville relieves you of guesswork about dryer size, type or construction. Our engineers survey your problem . . . their recommendations are job-tested in our pilot plant. Your Louisville Dryer is *built*—not assembled—and built right for your job. Its performance is backed by over 50 years of successful drying experience.

Ask one of our drying specialists to look over your problems. No obligation, of course.

PROCESS EQUIPMENT DIVISION GENERAL AMERICAN TRADE MARK

LOUISVILLE DRYING MACHINERY UNIT

GENERAL AMERICAN TRANSPORTATION CORPORATION

Dryer Sales Offices: 139 So. Fourth Street, Louisville 2, Kentucky • 380 Madison Ave., New York 17, New York
General Offices: 135 So. LaSalle Street, Chicago 90, Illinois
In Canada: Canadian Locomotive Company, Ltd., Kingston, Ontario
OFFICES IN ALL PRINCIPAL CITIES

Cost of Fuels Consumed By Major Industry Groups

(in thousands of dollars)

	1953	1952	1951	1950	1947
Chemical and allied products	347,243	315,570	293,232	250,637	211,199
Petroleum and coa' products	173,474	151,917	147,076	106,964	68,398
Rubber products	26,602	25,662	25,348	23,550	21,227
Stone, clay and glass products	277,480	267,237	270,705	237,035	202,870
Paper and allied products	204,164	185,607	191,834	175,395	147,670
Primary metal products	1,778,020	1,514,233	1,622,070	1,419,957	1,128,352
All industries, total	3,675,024	3,288,107	3,354,879	2,924,396	2,376,801

Cost of Electrical Energy Purchased By Major Industry Groups

(in thousands of dollars)

	1953	1952	1951	1950	1947
Chemical and allied products	191,735	167,108	142,871	121,052	85,405
Petroleum and coal products	51,288	44,678	40,677	36,303	28,293
Rubber products	33,742	31,523	30,698	28,839	24,685
Stone, clay and glass products	94,566	92,560	89,452	76,613	54,878
Paper and allied products	79,906	71,861	67,649	63,179	50,606
Primary metal products	349,061	299,915	295,823	253,370	188,784
All industries, total	1,720,414	1,573,315	1,462,147	1,260,182	954,717

How Much Power Do Chemicals Need?

Power consumption, which reflects stepped-up production and plant expansions, is on the upgrade in the chemical industry. The figures above show that manufacturers of chemicals anted up almost $539 million—or just about 10% of the $5.4-billion all-industry bill for fuel and electrical power in 1953. And six process industries, including primary metal products, accounted for just over two-thirds of the total.

These figures on fuel and power purchases have just been compiled by the Bureau of Census from the Annual Survey of Manufacturers. They cover all large plants (representing two-thirds of all manufacturing employment) and varying proportions of the numerous medium- and small-size plants.

Though the increase in chemical and allied products' fuel purchases (all coal, gas, and oil not used as raw materials) was slightly higher than the average over the six-year period from 1947-53, it was far less than petroleum and coal products' 154% gain over the same span. But its 125% increase in power purchases easily pegs the chemical industry as the fastest-growing electrical consumer.

And the electricity it buys isn't all an industry needs to keep it going. Federal Power Commission data (*below*) show that the average plant generated almost 30% of the power it used in 1953. And the chemical industry did slightly better (38.9%), contributed 13.2 billion kwh. to its power-hungry plants' 33.9 billion-kwh. appetite.

Quantity of Electrical Energy Used, Generated and Purchased by Major Industry Groups

(in million kwh.)

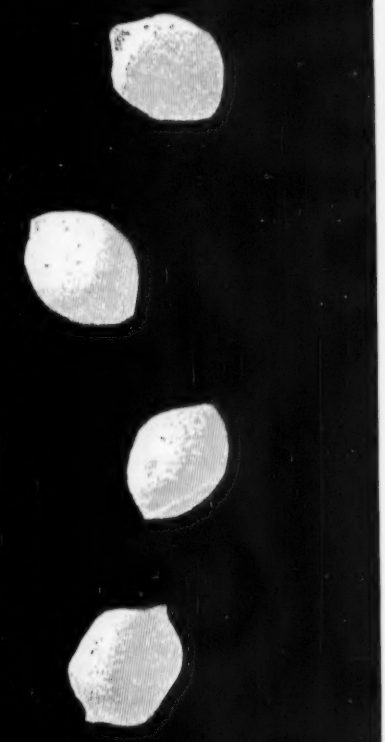
	1953		1950		1947		
	Used	Gen.	Gen.	Purch.	Used	Gen.	Purch.
Chemical and allied products	**33,961**	**13,185**	**10,395**	**16,001**	**19,610**	**8,058**	**11,963**
Petroleum and coal products	**9,424**	**4,449**	**3,859**	**4,721**	**6,498**	**3,246**	**3,753**
Rubber products	**3,858**	**737**	**785**	**3,008**	**3,445**	**810**	**2,650**
Stone, clay and glass products	**10,526**	**2,480**	**2,353**	**7,715**	**7,898**	**2,155**	**5,865**
Paper and allied products	**21,578**	**13,805**	**11,910**	**7,697**	**15,386**	**9,626**	**6,175**
Primary metal products	**61,711**	**20,723**	**14,110**	**38,818**	**40,645**	**11,851**	**31,428**
All industries, total	**216,898**	**64,469**	**52,478**	**131,222**	**140,947**	**43,936**	**102,822**

International MINERALS & CHEMICALS

magnesium oxide PELLETS

CARLOAD QUANTITIES

HIGH PURITY



MEMO

FOR CATALYST MANUFACTURERS

PETROLEUM REFINERS

GLASS, CERAMIC AND REFRACTORY MANUFACTURERS

METALLURGICAL INDUSTRIES

PELLETS ACTUAL SIZE: 5/8" *diameter*; 3/8" *thick*

***International's* new Magnesium Oxide Pellets are available in grades with low iron, low boron, low lime, low ignition loss. All are consistently uniform in size and quality.**

The extreme high purity of these MgO pellets, up to 99.5%, makes them especially adaptable to industrial processes requiring this basic chemical in a form essentially free from impurities. By producing MgO in this pellet form, we have been able to achieve purities that have never been commercially approached before in carload volume. This makes it possible also to supply, on a custom basis where purity and cost factors permit, a high purity ground product to screen specifications.

One of our several grades may be ideally suited to your requirements as a furnace feed for various electrically fused, high temperature refractory products; in catalysts; for special glass and ceramic products; and for certain metallurgical applications.

With large tonnages available at moderate cost, many industries now using less desirable materials can profitably utilize this chemical in their operations . . . it will pay *you* to investigate their application to your processes.

For experimental purposes, in any industrial plant, we will furnish adequate samples of International's Magnesium Oxide Pellets.

Please write: **POTASH DIVISION • INTERNATIONAL MINERALS & CHEMICAL CORPORATION**
GENERAL OFFICES: 20 NORTH WACKER DRIVE, CHICAGO 6,
Sales Offices: 20 North Wacker Drive, Chicago 6,
61 Broadway, New York 6, Midland, Texas

tracers...to opportunities in the chemica

MANAGEMENT SERVICES

ARIES

New Products & Processes
Technical & Economic Surveys
Design Engineering — Market Research
Write for Brochure H
R. S. ARIES & ASSOCIATES
270 Park Ave., New York 17, N.Y.

Clark Microanalytical Laboratory

Routine analyses in one week

CH, N, S, Halogen, Fluorine, Oxygen, Alkoxyl, Alkimide, Acetyl, Terminal Methyl, etc. by specialists in organic microchemical analysis.
HOWARD S. CLARK, DIRECTOR
P. O. Box 17 Urbana, Ill.

ENGINEERING CORPORATION OF AMERICA

Chemical & Petro-Chem Process Plants
Industrial Waste Treatment Projects
Air Pollution Abatement
Special Mechanical & Process Equipment
205 Grove Street Westfield, N. J.
Westfield 2-7117

JOHN J. HARTE CO.

Engineers • Constructors
Chemical • Process • Industrial
Petro • Fertilizer • Pulp & Paper
Water • Wastes • Material Handling
284 Techwood Dr., Atlanta, Ga.
New York • Washington • Foreign

THE C. W. NOFSINGER COMPANY

Personalized Engineering Service
PETROLEUM REFINING AND CHEMICAL INDUSTRIES
• Surveys—Planning—Process Design
• Engineering Design—Drafting—Procurement
• Supervision of Construction and Operation
906 Grand Avenue, Kansas City 6, Missouri

JAMES P. O'DONNELL

Engineers
CHEMICAL PROCESS PLANTS
Design—Procurement—Construction Supervision
39 Broadway, New York 6

SIRRINE

ENGINEERS
Plant Design & Surveys covering Chemical Electrochemical and Metallurgical Production; Industrial Waste Disposal; Water Supply & Treatment; Analysis & Reports
J. E. SIRRINE CO.
Greenville South Carolina

TECHNICAL ENTERPRISES, Inc.

Engineers—Consultants—Chemists
to
Chemical—Food—Pharmaceutical Industries
Complete Engineering Services
Product & Process Research & Development
SPECIALISTS IN
SMALLER MANUFACTURING PLANTS
31 South St., New York 4, N. Y. WH 3-1544

ROGER WILLIAMS

Technical & Economic Services, Inc.
• ENGINEERING ECONOMICS
• MARKET RESEARCH
• PRODUCT EVALUATION
Write for "Profit Evolution"
148 East 38th Street, New York City 16
Murray Hill 5-5257

MANAGEMENT SERVICES

Wisconsin Alumni Research Foundation

Project Research Consultation and Production Control Services in Biochemistry, Chemistry, Bacteriology, Pharmacology, and Insecticide Testing and Screening.

Write for price schedule

Wisconsin Alumni Research Foundation
P.O. Box 2059-G • Madison 1, Wisconsin

EMPLOYMENT

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

Positions Vacant

Chemist wanted with experience in manufacture of mastics and cements for metal and plastic wall tile. Midwest location, good salary, bonus arrangement and opportunity for advancement in expanding company. Our employees know of this ad. P-6924, Chemical Week.

Wanted—Chemist, by Resin Manufacturer in Northeastern U. S. Should be experienced in manufacture and application of Epon resins. Send resume including experience, education and salary desired. Reply to P-6989, Chemical Week.

WANTED

VINYL CHEMIST
Manufacturers' calendered film and vinyl sheeting requires experienced chemical engineer or chemist. All replies confidential. Reply
P-6868, Chemical Week
330 W. 42nd St., New York 36, N.Y.

WANTED

TECHNICAL EXECUTIVE
Opportunity for man with training in microbiology, paint industry experience and demonstrated sales ability. Established manufacturer in growing field of industrial microorganism control. Salary, commission, profit sharing annuity, Blue Cross. Write fully to
P-6921 CHEMICAL WEEK
520 N. Michigan Ave., Chicago 11, Ill.

SOUTHEAST TERRITORY

TECHNICAL SALES AND SERVICE
Unusual opportunity for man with experience in the paper industry and demonstrated sales ability to represent established manufacturer. Products are for industrial microorganism control. Territory southeast U. S. Salary, commission, profit sharing annuity, Blue Cross, plus opportunity to grow. Write fully to
P-6922 CHEMICAL WEEK
520 N. Michigan Ave., Chicago 11, Ill.

WANTED

FLOOR TILE CHEMIST
Experienced manufacture Vinyl Tile. Location, Midwest. Liberal insurance and Pension Plan. Reply
P-6867, Chemical Week
330 W. 42nd St., New York 36, N.Y.

SALES OPENINGS

PULP/PAPER ENGINEERS
TO SELL FILTERS
Graduate engineer, chemical preferred, with 4-8 years practical experience wet operations pulp and paper manufacture with aptitude and desire for sales engineering.
Three openings—Two Stamford, Connecticut; one Atlanta, Georgia. Only experienced men should apply.
Send resume. Interviews later for promising candidates our expense.
DORR-OLIVER INCORPORATED
STAMFORD, CONNECTICUT
Att: E. E. Johnson,
Director of Personnel.

EMPLOYMENT

Positions Vacant

RESEARCHERS NEEDED

CHEMICAL MARKET RESEARCH

Established growing organic chemical manufacturing company requires two additional chemical market researchers to assst in decision making at the executive level. Chemical or chemical engineering degree required.

1. **Senior opening.**
Age 30-40. Broad knowledge of market research techniques, and extensive experience in chemical or chemical-consuming industry required. Capable of assuming direct responsibility for market studies.

2. **Less experienced man.**
Age 25-35. Some field market research experience required. Should be familiar with market research literature.

Replies held in confidence. Send completed resume including salary history to
P-6955 CHEMICAL WEEK
330 W. 42 St. New York 36, N. Y.

For SALE or LEASE

In WISCONSIN

A Chemical Plant

20,000 square feet

Concrete block building in excellent condition—ideally situated near industrial Milwaukee in an area near paper mills, tanneries, and other chemical manufacturers.

Reinforced concrete floor. Water, sewer and all necessary facilities—150 horsepower boiler. On railroad siding—plenty of room for expansion and outside storage.

Ready for immediate occupancy . . . for additional information write or wire

P-6961 CHEMICAL WEEK
520 N. Michigan Ave.
Chicago 11, Ill.

Position Wanted

Technical Director small comp. 31, M.S. 8 yrs. specialty lacquers adhesives, plant management experience. PW-6888, Chemical Week.

Employment Service

CHEMISTS

CHEMICAL ENGINEERS
B.S. to Ph.D. Beginners—Experienced
We place EXCLUSIVELY with Chemical Companies
Call—Come In—Send 5 résumés
SELECTIVE PLACEMENT EMPLOYMENT AGENCY
17 William St. MI 2-3355 Newark, N. J.
O. A. Reed, Jr., M.Sc. S. Goodman, M.Sc.

rocess industries

EQUIPMENT--used-surplus

For Sale

Goslin-Birmingham Quadruple Effect Evaporator, vertical, long tubes, total 6965 sq. ft. Copper tubes. Excellent tcondition. Perry Equipment Corp. 1415 N. 6th St., Phila. 22, Pa.

Sharples Centrifuge, 16P Pressure—Tite Stain-less Steel, Ser. #47161109, Type M-12-B-16, IXY-52; explosion proof motor, unused. Perry Equipment Corp., 1415 N. 6th St., Phila. 22, Pa.

Worthington type HS steam driven gas com-pressor , size 7 x 16 x 9 cap. 542 CFM deld. @ 15# pr. Perry Equipment Corp., 1415 N. 6th St., Phila. 22, Pa.

CHEMICALS WANTED

BUYERS OF SURPLUS

CHEMICALS—OILS—SOLVENTS
DRUGS—RESINS—WAXES
PLASTICS—COLOR—ETC.

BARCLAY CHEMICAL COMPANY, INC.
75 Varick Street New York 13, N. Y.
WORTH 4-5120

SURPLUS WANTED

CHEMICALS, PHARMACEUTICALS, OILS
PLASTICIZERS, RESINS, DYES
SOLVENTS, PIGMENTS, ETC.

CHEMICAL SERVICE CORPORATION
96-02 Beaver Street, New York 5, N. Y.
HAnover 2-6970

WANTED

ALL SURPLUS CHEMICALS
Need Now
Aluminum Powder & Paste, Methanol (on or off spec), Ethylene Glycol, Diethylethanolamine.

CHEMSOL, INC.
70 Dod Street, Elizabeth, N. J., EL 4-7654

SPECIAL SERVICES

Tank Storage, Drumming and Packaging, avail-able at modern plant in Northern N. J. on rail siding. We can solve your problem of shipping LCL to your Eastern customers. Compounding and laboratory control also available. SS-6424, Chemical Week.

Truland Chemical & Engineering Co., Inc.
AVAILABLE CUSTOM REFINING FACILITIES
Distillation, Extractions
Separations, Fractionations
WANTED All Types of Crude Mixtures
Drum Lots - Tank Cars
By-Products, Residues, Wastes
Contaminated Solvents
Box 426, Union, N. J. Murdock 6-5252

"TRACERS"

UNDISPLAYED RATE

$1.80 a line, minimum 2 lines. To figure ad-vance payment count 5 average words as a line.

POSITION WANTED undisplayed advertising rate is one-half of the above rate, payable in advance.

DISPLAYED RATES ON REQUEST.

PRODUCTION . . . . EQUIPMENT

Quick Coupler: Snap-Tite "E" Coupling, developed by Snap-Tite, Inc. (Union City, Pa.), is a quick-connect, quick-disconnect union that can be used for high pressure as well as gravity flow and vacuum. Recessed valve design is said to give clean flow lines and to assure positive seal when coupling is disconnected. They are available in a variety of alloys, in standard sizes from ⅛- to 3-in. I.D., specials to 10-in. I.D.

•

Size Separator: Allis-Chalmers Mfg. Co. (Milwaukee, Wis.) has just brought out its Model AVS Aero-Vibe screen that utilizes a simplified design to handle size separations from 1½ in. to 35 mesh. Engineered to size a wide variety of materials, such as chemicals, fertilizers, gypsum, metal ores, etc., the screen can also be used in separating solids from liquids.

•

Relief Valve: For services where protection against corrosion, fouling of working parts, and low back-pressure surges is required, Crosby Steam Gage & Valve Co. (Wrentham, Mass.) offers its new Model JB Protecto-Seal bellows relief valve. The device operates at pressures from 25 to 2,500 psi., comes in 11 orifice sizes and 1- to 6-in. inlet sizes.

•

Flexible Nipple: Shearing strain caused by piping misalignment can be overcome, says Techniflex Corp. (Port Jervis, N.Y.), by the use of its flexible seamless bronze nipple connectors. Bellowslike construction compensates for off-center connections, also absorbs stress set up by vibration or expansion-contraction. Standard units have one union, one male fitting; are supplied in sizes from ⅜- to 2½-in. I.P.T.

•

Magnetic Memory: Brush Electronics Co. (Cleveland, O.) has developed a data storage device that combines the advantages of a magnetic drum and tape recorder. Dubbed TapeDrum, the units is designed to provide rapid access time and large storage capacity for inventory control, data reduction, and process control systems. Data from up to 128 digitized control points are made immediately available to automatic computers for trend studies, control calculations, or punch-card recording.

You gotta be first...

to be best!*

*25 years ago, Alloy Fabricators started to build Stainless Steel, Monel, Inconel, Nickel and Aluminum Process Equip-ment. With this experience, naturally, they're your *best bet today!*

It's Still Our Only Business — And We Mind It Well!

ALLOY FABRICATORS
DIVISION OF CONTINENTAL COPPER AND STEEL INDUSTRIES, INC.
PERTH AMBOY, NEW JERSEY

STOP!

DON'T THROW AWAY USED ACTIVATED CARBON

Used activated carbon can usually be reactivated — original adsorptive capacity fully restored.

Particularly important on activated carbons costing 35¢ per pound and more. Savings from 25% to 50% possible. In writing — furnish com-plete details.

BARNEBEY-CHENEY Company
CASSADY AT EIGHTH COLUMBUS 19, OHIO
In Canada: BARNEBEY-CHENEY LTD., St. Johns, Quebec

Filter Closer: D. R. Sperry & Co. (Batavia, Ill.) now offers a manually operated hydraulic closing device for filter presses. Dubbed Handraulic, it replaces the filler block, requires no alteration for installation.

•

Adjustable Pulverizer: A vertical hammer mill with built-in air classifier—that's how Metals Disintegrating Co. (Summit, N.J.) describes its new Mikro-Bud pulverizer. Chief feature of the unit is a simple handwheel adjustment which shifts through the entire range of particle sizing within five seconds. Designed to produce an intermediate fine grind at maximum capacity, the Mikro-Bud will handle a large range of dry, reasonably nonabrasive mineral, chemical, vegetable, and plastic materials.

•

Tablet Coater: F. J. Stokes Machine Co. (Philadelphia) is bringing out a tablet-within-a-tablet machine for coating core tablets of active ingredient with dry powder "raincoats." Capable of turning out pills up to ½ in. in diameter at the rate of 500/minute, the machine can handle penicillin and other pharmaceuticals that are adversely affected by wet syrups used in slower, more laborious pan-coating methods.

•

High-Shear Viscometer: A pneumatic measuring system replaces springs in Hagan Corp.'s (Pittsburgh, Pa.) new rotational viscometer for greater accuracy in determining viscosity characteristics of pigment slurries, paints, plastics, etc. Pneumatic system simplifies range changing, is said to be extremely sensitive and free of mechanical hysteresis.

CHEMICAL WEEK • ADVERTISERS INDEX

July 9, 1955

ALLIS-CHALMERS MFG. CO. 6
Agency—Compton Adv., Inc.

ALLOY FABRICATORS DIV., CONTINENTAL COPPER & STEEL INDUSTRIES, INC. 91
Agency—Hiram Ashe Adv.

AMERICAN AGRICULTURAL CHEMICAL CO., THE 81
Agency—Donahue & Coe, Inc.

ATLANTIC REFINING CO. 38
Agency—N. W. Ayer & Son, Inc.

BAKER CHEMICAL CO., J. T. 56
Agency—Wildrick & Miller, Inc.

BARNEBEY-CHENEY CO. 91
Agency—Byer & Bowman Adv.

BUFFALO FORGE CO. 44
Agency—Melvin F. Hall Adv., Inc.

CAMCO PRODUCTS, INC. 12
Agency—Vincent Pacelli Adv.

CARBIDE & CARBON CHEMICALS CO., DIV. OF UNION CARBIDE & CARBON CORP. 66, 77
Agency—J. M. Mathes, Inc.

CHURCH & DWIGHT CO., INC. 73
Agency—J. Walter Thompson Co.

CONTINENTAL CAN CO. 43
Agency—Batten, Barton, Durstine & Osborn, Inc.

CORNING GLASS WORKS 59
Agency—Charles L. Rumrill & Co.

DAVISON CHEMICAL CO., DIV. OF W. R. GRACE & CO. 11
Agency—St. Georges & Keyes, Inc.

DOW CHEMICAL CO. 25, 51
Agency—MacManus, John & Adams, Inc.

DU PONT DE NEMOURS & CO., INC. E. I., ORGANIC CHEMICALS DEPT. .. 71
Agency—Batten, Barton, Durstine & Osborn, Inc.

EASTERN STATES PETROLEUM CO. .. 64
Agency—Ruthrauff & Ryan, Inc.

EASTMAN CHEMICAL PRODUCTS, INC. 15
Agency—Kenyon & Eckhardt, Inc.

ESSO STANDARD OIL CO. 55
Agency—McCann-Erickson, Inc.

EIMCO CORP., THE 42
Agency—Matzie Co.

GENERAL AMERICAN TRANSPORTATION CORP., LOUISVILLE DRYER DIV. 87
Agency—Weiss & Geller, Inc.

GIRDLER CO., THE 27
Agency—Griswold-Eshleman Co.

GLYCERINE PRODUCERS' ASSOCIATION 16
Agency—G. M. Basford Co.

GOODYEAR TIRE & RUBBER CO. 1
Agency—Kudner Agency, Inc.

GRAVER TANK & MANUFACTURING CO., INC. 53
Agency—The Buchen Co.

HAMMOND BAG & PAPER CO. 52
Agency—Walker & Downing Adv.

HARSHAW CHEMICAL CO., THE 67
HERCULES POWDER CO. 19
Agency—Fuller & Smith & Ross, Inc.

HEYDEN CHEMICAL CORP. .... 4th Cover
Agency—Sommers-Davis, Inc.

INTERNATIONAL MINERALS & CHEMICAL CORP. 99
Agency—C. Franklin Brown, Inc.

INTERNATIONAL PAPER CO. 85
Agency—Picard, Marvin & Redfield

KAISER ENGINEERS 4
Agency—Harrington Richards, Div. of Fletcher D. Richards, Inc.

KELLOGG CO., THE M. W. 33
Agency—Ellington & Co.

LITHIUM CORPORATION OF AMERICA, INC. 8
Agency—Keystone Adv., Inc.

LUMMUS CO., THE 37
Agency—G. M. Basford Co.

MALLINCKRODT CHEMICAL WORKS ..... 3rd Cover
Agency—Smith & Williams Adv. Inc.

McKESSON & ROBBINS, INC. 57
Agency—Ellington & Co., Inc.

METASAP CHEMICAL CO. 45
Agency—Lewin, Williams & Saylor, Inc.

MONSANTO CHEMICAL CO. 63
Agency—Gardner Adv. Co.

MONSANTO CHEMICAL CO. 44
Agency—Needham, Louis & Brorby, Inc.

MUTUAL CHEMICAL DIV., ALLIED CHEMICAL & DYE CORP. 20
Agency—The House of J. Hayden Twiss

NATIONAL PETRO-CHEMICAL CORP. .. 79
Agency—G. M. Basford Co.

OHIO APEX DIV., FOOD MACHINERY & CHEMICAL CORP. 40
Agency—Advertising, Inc.

OLDBURY ELECTRO-CHEMICAL CO. 66
Agency—Briggs & Varley, Inc.

PERKIN ELMER CORP., THE 35
Agency—Fred Wittner Adv.

PHILLIPS CO., THE THOMAS 58
Agency—McClure & Wilder, Inc.

PRESSED STEEL TANK CO. 73
Agency—The Buchen Co.

PRITCHARD & CO., J. F. 75
Agency—Carter Adv. Agency, Inc.

PROCON INC. 13
Agency—Sam J. Gallay Adv. Agency

PUBLICKER INDUSTRIES, INC. 52
Agency—Al Paul Lefton Co., Inc.

QUAKER OATS CO., THE CHEMICAL DIV. 3
Agency—Roger, Smith, Potts & Turnbull Adv.

REICHHOLD CHEMICALS, INC. 5
Agency—MacManus, John & Adams, Inc.

RELIANCE ELECTRIC & ENGINEERING CO. 14
Agency—Wellman, Buschman & Hines, Inc.

RHEEM MANUFACTURING CO 61
Agency—Campbell-Ewald Co.

ROHM & HAAS CO 2
Agency—Arndt, Preston, Chapin Lamb & Keen, Inc.

SHELL CHEMICAL CORP. ..... 2nd Cover
Agency—J. Walter Thompson Co.

SONNEBORN SONS, INC., L. 7
Agency—St. Georges & Keyes, Inc.

STAUFFER CHEMICAL CO. 9
Agency—The House of J. Hayden Twiss

SWIFT & CO. 31
Agency—Russell T. Gray, Inc.

U. S. STEEL CORP., COAL CHEMICALS DIV. 41
Agency—Batten, Barton, Durstine & Osborn, Inc.

U. S. STEEL CORP., STEEL PROD. CUTS DIV. 68
Agency—Batten, Barton, Durstine & Osborn, Inc.

WALLACE & TIERNAN, INC. 54
Agency—Branstater Assoc., Inc.

WEST END CHEMICAL CO. 65
Agency—Norton M. Jacobs Adv.

WESTINGHOUSE ELECTRIC CORP. .. 46, 47
Agency—Fuller & Smith & Ross Inc.

WESTVACO CHEMICAL DIV., FOOD MACHINERY & CHEMICAL CORP. 83
Agency—James J. McMahon, Inc.

WOLF & CO., JACQUES 36
Agency—Riedl & Freede, Inc.

WYANDOTTE CHEMICALS CORP. 26
Agency—Brooke, Smith, French & Dorrance, Inc.

tracers SECTION

(Classified Advertising)

F. J. Eberle, Asst. Mgr.

CHEMICALS: Offered/Wanted 91
EMPLOYMENT 90
EQUIPMENT: Used/Surplus New For Sale 91
Wanted 91
MANAGEMENT SERVICES 90
SPECIAL SERVICES 91

ADVERTISING STAFF

Atlanta 3 ... William D. Lanier, 1321 Rhodes-Haverty Bldg., Walnut 5778-2383

Boston 16 ... 350 Park Square Building Hubbard 2-7160

Chicago 11 ... Alfred D. Becker, Jr., Steven J. Shaw, 520 N. Michigan Ave. Mohawk 4-5800

Cleveland 15 ... Vaughn K. Dissette, 1510 Hanna Bldg., Superior 7000

Dallas 1 ... James Cash, First National Bank Bldg., Prospect 7-5064

Detroit 26 ... 856 Penobscot Bldg., Woodward 2-1793

Los Angeles 17 William C. Woolston, 1111 Wilshire Blvd., Madison 6-4323

New York 36 ... Knox Armstrong H. L. Brown, L. Charles Todaro, 330 West 42 St., LOngacre 4-3000

Philadelphia 3 William B. Hannum, Jr., Charles F. Onasch, Architects Bldg., 17th & Sansom Sts., RIttenhouse 6-0670

Pittsburgh 22 ... 738 Oliver Bldg., Atlantic 1-4707

San Francisco 4 ... T. Evans Wyckoff 68 Post St., Douglas 2-4600

St. Louis 8 ... 3615 Olive St., Continental Bldg., Lucas 4867

The most elementary consideration in any process is *what you start with.* Your best engineered process and your finest equipment will not produce satisfactory products unless the starting materials—especially chemicals—are exactly right. And in the end, using the *right* chemical often saves money even at slightly higher first cost. More than 200 process industries have come to depend upon Mallinckrodt for *their* chemicals because they know Mallinckrodt can supply chemical needs promptly and in quantity. *Mallinckrodt's flexible production facilities are geared to the precision manufacture of chemicals from a few tons to carload lots.*

Write for our brochure which lists and describes some of the many Mallinckrodt chemicals and their uses.

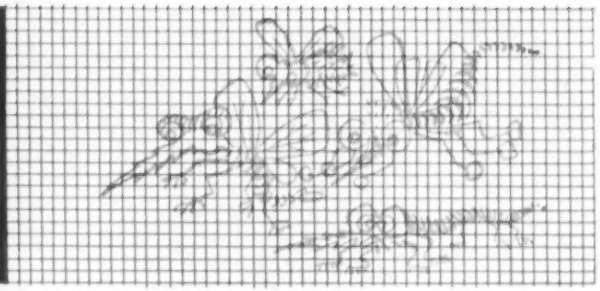
Serving the Process Industries since 1867 Mallinckrodt®

Manufacturers of chemicals for industrial, medicinal, photographic and analytical uses

Mallinckrodt Chemical Works

MALLINCKRODT STREET, ST. LOUIS 7, MO. 72 GOLD STREET, NEW YORK 8, N. Y.
CHICAGO • CINCINNATI • CLEVELAND •
LOS ANGELES • PHILADELPHIA • SAN FRANCISCO • MONTREAL • TORONTO

STOP SPOILAGE BY MOLDS AND BACTERIA...



Heyden PARASEPTS®

(ESTERS OF PARAHYDROXYBENZOIC ACID)

IN POLISHES, WAXES, PASTES, GUMS..

IN PHARMACEUTICALS..

IN TOILETRIES..

If your product is among the many that are subject to mold and bacterial attack, it will pay you to investigate the Parasepts as preservatives. These colorless and practically odorless neutral esters combine the properties of effectiveness, stability and safety, and have long served in a wide variety of products.

Our sales and technical staffs will be glad to discuss your prospective use. Write or phone the nearest sales office for full information and samples.

•

METHYL PARASEPT
Purified
(Methylparaben U.S.P.)

PROPYL PARASEPT
Purified
(Propylparaben U.S.P.)

ETHYL PARASEPT
Purified

BUTYL PARASEPT
Purified

BENZYL PARASEPT
Purified

Technical grades also available for industrial applications. 100, 50, 25 lb. fiber drums.

HEYDEN
CHEMICAL CORPORATION

342 Madison Avenue, New York 17, N. Y.

Chicago • Cincinnati • Detroit • Philadelphia • Providence • San Francisco

FINE HEYDEN CHEMICALS

Benzaldehyde • Benzoic Acids • Benzyl Chloride • Beta-Oxynaphthoic Acid • Chlorotoluenes • Creosotes • Formaldehyde • Formic Acid • Guaiacols Parahydroxybenzoates • Pentaerythritols • Propyl Gallate • Resorcinol • Salicylates • Salicylic Acid • Sodium Benzoate